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AMIGA FORMAT Contents

Issue 132 January 2000













WORLD NEWS

■ SDS take over Scalos development ■ G3 arrival imminent
■ Transmeta reveal first product ■ Simon 2 announced

Microsoft, the future & the Amiga

Okay, it's official. Judge Thomas Penfield Jackson, who is presiding over the US DOJ vs Microsoft antitrust case, has declared that Microsoft do indeed hold a monopoly in computer operating systems.

In a lengthy 'finding of fact' document published at the beginning of November, Judge Jackson wrote: "Microsoft enjoys monopoly power in the relevant market".





(Left) Judge Richard Posner (Above) Judge Thomas Jackson.

This document is not a verdict, that has still yet to be made, but the finding of fact makes clear that Microsoft have abused their position. In the closing paragraph, Jackson says:

"Most harmful of all is the message that Microsoft's actions have conveyed to every enterprise with the potential to innovate in the computer industry. Through its conduct toward Netscape, IBM, Compaq, Intel, and others, Microsoft has demonstrated that it will use its prodigious market power and immense profits to harm any firm that insists on pursuing initiatives that could intensify competition against one of Microsoft's core products. Microsoft's past success in hurting such companies and stifling innovation deters investment in technologies and businesses that exhibit the potential to threaten Microsoft. The ultimate result is that some innovations that would truly benefit consumers never occur for the sole reason that they do not coincide with Microsoft's self-interest."

WHAT NEXT?

So, Microsoft has a monopoly. The question is, now, what can be done about it? The task before Judge Jackson is not simply to punish Microsoft for wrong-doing, but to formulate a remedy that will break MS's stranglehold on the market and will benefit consumers.

Pundits believe that Microsoft will be split into several independent divisions, perhaps one to develop Windows, one for the Office range, one for Explorer and so on – following precedent set by the break up of telecommunications giant AT&T in the '70s. Since Friday and the appointment of Judge Richard Posner as a settlement negotiator for the case, this solution seems less likely. Posner has argued against such practices in his book '*Antitrust: An Economic Perspective*'.

> *A possible solution to Microsoft's hold on the market would be to make the Windows API available to other software companies*

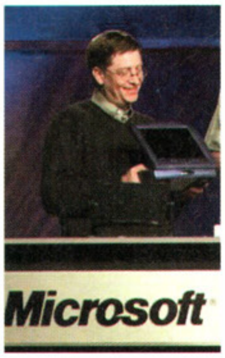
Another possible solution would be to force Microsoft to make the Windows API openly available and so allow other software companies to produce Windows-compatible operating systems.

Whatever verdict Jackson and Posner reach, its consequences will be a long time in taking effect. The market is in such a state that there is no realistic viable alternative to Windows in the desktop. Any punitive action towards Microsoft will not change that fact; the damage has already been done. Even if Microsoft's aggressive OEM licensing of its operating system is curbed, Judge Jackson cannot force users to buy an alternative OS with poor availability of software. Even if rival companies are permitted to produce Windows-compatible operating systems, such an undertaking would take significant amounts of time.

The question arises, how relevant is the DoJ's suit. Law, as always, is lagging far behind the pace of technological development. It could be argued that Microsoft will be a victim of its own successes, anyway. The sheer size and scale of Microsoft's operations mean that it is not best-placed to react to new technologies. Experts claim that the day of the desktop PC is over. Digital convergence and portable Internet devices are the future. And the beast of Redmond's product in the portable and embedded market, Windows CE, is suffering from a poor adoption rate.

THE FUTURE

What can companies who develop so-called alternative operating systems expect from the outcome of the anitrust case, besides the surge in the stock values that occurred in the wake of the findings of fact? Nothing that was not already happening, probably. A trend already



Things are still business as usual for Bill Gates.

A PIECE OF THE PIE

Following the ruling by Judge Jackson that Microsoft has abused its monopoly position within the industry, a flurry of private class action suits have been filed across the US. So far, attorneys in California, New York, and Louisiana have filed on behalf of PC manufacturers and consumers. According to one lawyer, Microsoft has overcharged consumers collectively to the tune of $10 billion. If the DoJ and Microsoft cannot reach a settlement, compensation could total as much as $30 billion. Whatever the outcome of these individual suits, you can bet that the lawyers are laughing all the way to the bank.



Month in view...

What a month! They say that no news is good news, but then "they" obviously don't have to put together a 92-page magazine every four weeks like we do. The lack of news in the market strikes me as either people finally being cautious about making intemperate announcements about products that are nowhere near ready, but it wouldn't surprise me if people weren't making announcements because they haven't anything to announce.

It's a poor situation when developers think twice before engaging in a licence to port a game, or start developing a serious product because of the fact that they're going to lose all the money they've invested. All those of you who won't buy software because of the fact that it doesn't come with a printed manual, or that it doesn't come in a big printed box, with a proper CD, or because it hasn't had 10 man-years of development, can thank the fu^H^H idiots (I'd say something stronger, but this is a family magazine), who've killed the market by pirating all the software.

OS3.5 "Faith Crack" is apparently now doing the rounds, and I sincerely hope that none of you have it, because if I find out who you are I'll come round your house with a flamethrower (or get someone bigger and scarier than me to do it). All the petitions to Gateway for open sourcing AmigaOS, for so-and-so to port a game for the Amiga, etc. are harmless enough, but the real people to have a go at are the pirates. If you're offered pirated software, tell us about it and we'll print these people's names, addresses, email address, whatever.

Ben Vost

exists for a move away from the Windows platform.

The success story in operating systems is the freely-distributable UNIX-like system, Linux. The impenetrability of this OS meant that it initially only appealed to geeks, but with more user-friendly distributions being made, such as Caldera's OpenLinux, and more large software companies developing products for the platform, it is increasingly seen as a contender for desktop PCs. Even commercial game manufacturers are beginning to talk about supporting the platform.

Unfortunately, Linux success is largely by default, not due to merit. Its key advantages are that it is low-cost and runs on the same PC hardware as Windows. What the computing

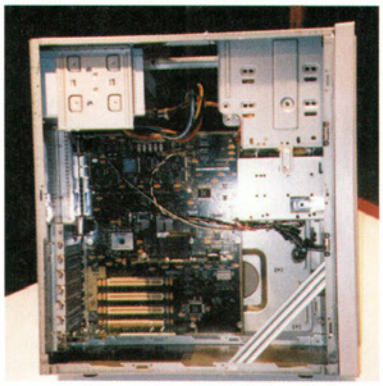
> *If Microsoft is emasculated as a result of the trial, there may be more open-mindedness towards other operating systems and hardware*

market needs is a break not just from Windows, but the Pentium or clone-based PCs. If we are going to advance the integration of computing devices within our lives, it's high time the shackles bonding the computing world to a 20-year-old hardware standard were broken.

Where does the Amiga fit into all of this? As always, our platform is a lone outsider, ignored by the rest of the computing world. Jim Collas' revolutionary plans while Amiga president were on the right track. The post-Collas Amiga, Inc. seems entirely directionless, though. It is ironic that, after two years of stalling from Gateway, the trend that the Amiga community was following towards a PowerPC platform is once again on track. The possibility of powerful and inexpensive PPC machines capable of running an Amiga-like OS is here thanks to IBM's freely available POP standard, as reported last issue. The lack of an OS could be solved by Haage & Partner, who are keen to port the AmigaOS to PPC.

If Microsoft is emasculated as a result of the trial, perhaps there will be more open-mindedness towards other operating systems and hardware. Perhaps, there will be room for the Amiga, again – or at least a computing device that follows its spirit.

The computing world is poised on the brink of revolution. Whether the future has a place for either Microsoft or the Amiga remains to be seen.



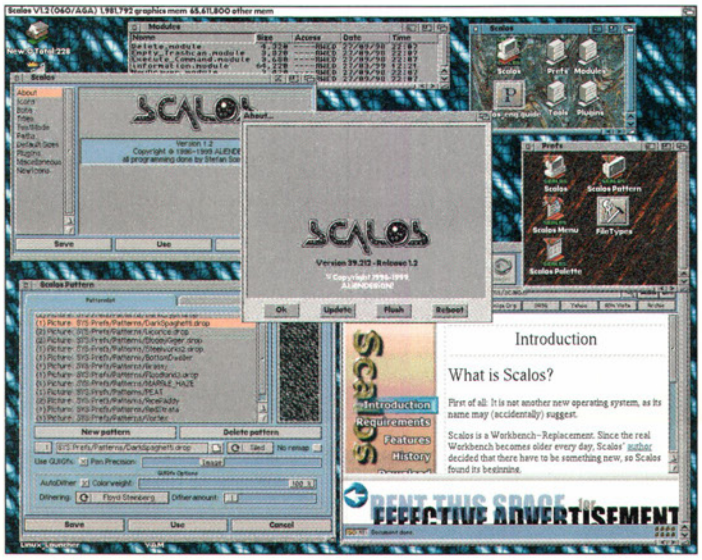
Is this the future of the Amiga, IBM's POP reference platform?

Scalos rebirth

Satanic Dreams Software (SDS) have announced that they are to take over development of Scalos, the desktop replacement for AmigaOS.

SDS became involved in the *Scalos* project when the author, Stefan Sommerfeld, stated earlier this month that he intended to cease development, and, after some negotiation, the source code has been released to SDS.

The team's main goal is to increase the stability of *Scalos* and fix bugs. Other likely targets for work include the preferences editors and the quirky filetyping system. Once the existing version of *Scalos* has been cleaned up, SDS will start implementing new features. Support or emulation of AmigaOS3.5 Workbench features may come in the future, but currently no member of the team has the new OS. An ARexx port, perhaps supporting the OS3.5 commands, is planned.



It looks like there's going to updates to Scalos in the future after all.

Scalos's shareware status is still being discussed. Registration of the package via Vapor's website has been cancelled. At the moment, it seems likely that further revisions to the current version of *Scalos* will be made freely available to existing registered users. *Scalos 2.0*, if and when released, will require an upgrade fee.

Mike Carter of SDS told *Amiga Format*: 'Don't expect anything too soon as most of us are working full time in IT and get sick of computers in the evening! But then again we really want to get this done, it's something the four of us believe in!'

Further information will become available from the Satanic Dream's website at http://www.satanicdreams.com/.

Continued overleaf ➡



The name Satanic Dreams would be more at home for a metal band.



THE MILLENNIUM AMIGA POLL

The developers of *Tornado 3D*, Italian software house Eyelight, are conducting a survey via their website to gauge Amiga users' feelings about the future of the platform and their own product range. You needn't worry, since all information entered in the survey will be kept confidential.

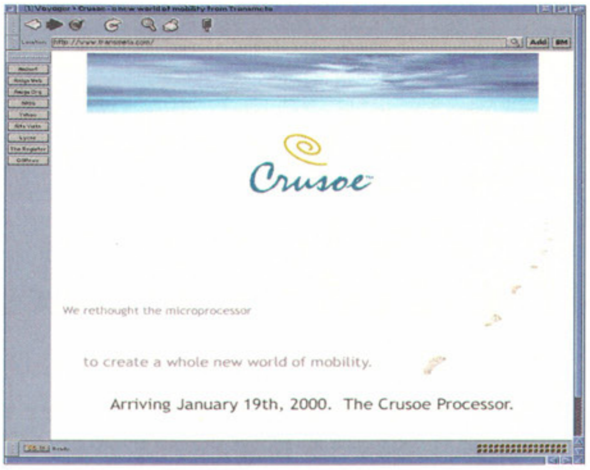
To spur you into contributing, Eyelight are offering three prizes each day and one weekly prize. The first place daily prize is *Power Pack Volume I* and a discount voucher, second prize a *Tornado3D* T-shirt and a discount voucher and third prize a discount voucher alone. The weekly prize is a copy of *Tornado3D SE* and, yes, a discount voucher. The generous souls are offering prizes totalling in excess of $5,000.

The poll will be conducted from November 19th to December 19th, so if you haven't already filled it in before reading this, you should just about have time to do so. Their website can be found at http://www.eyelight-it.com/.



A sample of what Tornado3D is capable of.

Transmeta to reveal all



Top-secret Silicon Valley start-up, Transmeta, have at last announced they have an announcement to make. Their website now advertises their first product, Crusoe, touted as a revolutionary microprocessor. For the last two years this site simply proclaimed that it did not exist yet. It is with such clever engineering of their corporate image that Transmeta have fed the rumour mill. Will Crusoe be the VLIW processor with code morphing technology hinted at by the patents Transmeta has filed? We will all have to wait until January 19th next year to find out. Keep watch at http://www.transmeta.com/.

It's a nice-looking site but a bit of a duff name for a processor.

G3 is here!

When you read the Köln show report on pages 14-19, you'll see mention of Met@box's long-awaited AmiJoe card for the A1200. As previously reported, this card offers a G3 without companion 680x0 processor for the first in a new generation of Amiga accelerator cards. The idea is that the card will still run 68k programs, but based on a special 68000 series emulation program running on the PowerPC chip. phase 5 are working on a similar product, featuring the newer G4 processor, but they have been subject to delays owing to Motorola not being able to supply them with parts they require. This, and the message we received from Met@box recently, means that the forthcoming AmiJoe card will be the first to market.

The message we received stated that the AmiJoe card is actually finished now and is ready to go into production (and should be in production by the time you read this) for delivery towards the tail end of January. Boards for the big box Amigas – 2000/3000/4000 – will follow within about two months from shipping of the A1200 version.

The only thing left to organise is the emulation software, which Met@box hope to license from Haage & Partner who already have a 68000 emulator that will run at the speed of a 20MHz 68040 on the current top-of-the-range 604e 200MHz processor on the CyberStorm PPC.



A first glimpse of the Met@box G3 card could be had at Köln, but there are still no specs.

100 Issues ago

AF32 March 1992

AMIGA FORMAT



We look at what was going on in the Amiga market 100 issues of *AF* ago...

■ Cover feature: Completely Devastating. A clever use of the initials CD led into a feature about how CD-ROM was going to change the Amiga.

■ On the disks: One floppy with demos of *Top Banana* – an ecological platform game and *Air Warrior* – an online flight sim (for which you needed a 1200 baud modem), plus other bits.

■ News: The A690 (renamed eventually to the A570) due to go on sale in March 91! A1500s shipping with Workbench 2 and the newer Denise chip; Newer Technologies telling *AF* about an Amiga laptop that they reckon they could have done for Christmas; RCS announce their top of the range 68040-based accelerator for the 2000 called the Fusion Forty (this card has been plagued with problems ever since it was first developed, but was always one of the fastest cards around). Also on the cards were the chain of Calculus shops; a new version of *ADPro* (2.1) and the Amiga appearing in an episode of *Lovejoy*.

■ Prices: You could get Gordon Harwood's *PowerPlay 3* pack which consisted of an A500+ with 31 games, Philips CM8833 II and a Star LC200 mono 24-pin dot matrix printer for just £829.95

■ Games reviewed included: *Heart of China* (Sierra) 90%, *Robocop 3* (Ocean) 91%, *Mercenary III* (Novagen) 87%, *The Godfather* (US Gold) 46%, *WWF Wrestlemania* (Ocean) 72%

■ Serious products reviewed: Video Director (Gold Disk) 91%, Miracle Keyboard Tutor (Software Toolworks) 93%, Stereo Master (Microdeal) 81%

■ Notes: The proportion of ads to editorial in the early days of *Amiga Format* was much more like 50:50, rather than the 90:10 ratio we have now.

■ Pages: 228 ■ Cost: £2.95

Product News...Product News...Product News...Product

fxPaint 1.1 is out. It has faster speed and better support for P96.

AmTelnet 2.2 is available from the Vapor website. It has better terminal support and bug fixes.

PFS3 updated. Upgrade to v5.3, now *PFS Doctor* can unformat and recover NDOS partitions.

AmiDog Movie Player v1.30. It's an animation player for WarpUp that plays MPEG 1&2, FLI/FLC, AVI and QT files.

New Multidisk device for Catweasel available from http://www.jschoenfeld.com/mdisk346.lha

New RTG software: *Picasso96* and *CyberGraphX* both get an update, from 1.44b to v2 for *Picasso96*, and from 4.1 to 4.2 for *CyberGraphX*.

Product News...Product News...Product News...Product

FusionPPC delayed?

By the time we wrote the news this issue, the November 20th deadline for the delivery of FusionPPC had been and gone. Concerned at the lack of this potentially groundbreaking new product, we gave Blittersoft a call on your behalf to find out what was going on. Owner Paul LeSurf told us, "There is absolutely no change in the way it is proceeding, it is just a little late. I have spoken at length to the coders and it should reach us in time for Christmas.". It's not uncommon for software delivery dates to be prone to slippage, but we hope that FusionPPC will be available by the time you read this. Look out for a definitive review in an upcoming issue.

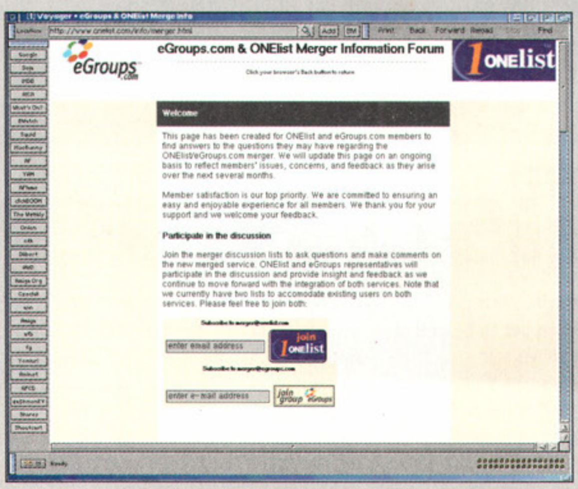


If FusionPPC was available, perhaps we could actually lay out our mag on Amigas.

eGroups and ONElist merge

On the November 9th 1999, mailing list rivals eGroups (favoured by *Amiga Format* for its afb mailing list) and ONElist (favoured by *AmiGactive* for its mailing list) have merged to become one company called eGroups Inc.

Both companies were launched only last year in 1998, and now, as one company will serve more than 13 million members using more than 260,000 mailing lists exchanging more than 1.3 billion emails in a month (not all of them are afb messages, honest). "Our mission is to revolutionise the way groups of people communicate using the Internet," said Michael Klein, new CEO for the combined companies. "Merging the two biggest players gives us undisputed leadership in the email community and group communications category." And with more than 135 million people estimated to be using email regularly to communicate by 2001, according to Forester Research, it means that the newly combined eGroups has vast growth potential.



As far as afb members are concerned, nothing should change in the very near future. The new eGroups.com is committed to making sure that the merger proceeds as smoothly as possible, we just hope that the famed reliability of ONElist is complemented by the innovation and feature list that eGroups commanded to make afb an even more compelling mailing list soon.

Let's hope the merger results in eGroups' ideas and ONElist's reliability, not the other way around.

Vital Horgan



Never was a big fan of the patronising "upgrade or die" attitude dictated by Amiga journalists during the platform's initial declining years. They'd never paid for a bit of computer kit in their lives, so who were they to preach on the virtues of exchanging cash for consumer electronics?

However, I feel unable to resist the urge to spout the hackneyed line when it comes to AmigaOS 3.5. The idea that we should buy something whether or not we actually want it seems ludicrous, but I think this is an exceptional case. Despite my comments in the last issue about Amiga not being the ones to lead the desktop computer revolution in the 21st Century, at least they're doing something constructive. With a sales target of 20,000 for the OS upgrade, it's only ever going to be a barely-breaking-even project for Amiga, but with any luck, if it succeeds it should send a message not only to Amiga but to the rest of the IT industry that there is a groundswell of support for new and alternative ways of computing.

Even if you haven't been convinced yet that it's going to make a whole lot of difference to your everyday Amiga usage, put your principals first just for once. It might not have everything you ever wanted from an operating system, and it might cause more problems than it solves at first, but stick with it. No doubt you'll find that once you've sussed out the many seemingly minor but useful improvements, it really was worth shelling out for anyway.

So let's make this a merry Christmas and a happy new millennium* for everyone who has worked on the update. Buy it, use it, give them feedback and maybe sometime soon, even if we have to use it on a Mac or PC, we'll have an AmigaOS we can all be proud of.

Tony Horgan



Continued overleaf ➡

AMIGA GOES TO THE MOVIES

We were very pleased to hear from Mark Forbes recently. The name is probably familiar from his contributions to both *CU Amiga* and *Amiga User International*, and he's now turned moviemaker. "My DV horror short begins shooting next Monday November 22nd and is set in Ireland, filmed in London. It's a cross between *An American Werewolf in London*, (the pub bit!) and an episode of *The Twilight Zone*. The film has been soley produced using Amiga software & hardware, and with a lot of help from Ogy, an Amiga regular "Gallery" artist who's putting the finishing touches to the artwork. Good news is I have enough money to film it, now, but editing is another matter. I'm told the cheapest I can expect is £70 per hour! I've also got some help while producing it from Vince at Epic Marketing and Analogic Computers." We look forward to seeing the final result soon Mark!

SIMON 2 FOR AMIGA!





Seconds after our ScreenPlay previews spread went to press, longtime Amiga developer and dealer Epic Marketing revealed that they could finally announce the imminent release of *Simon the Sorcerer 2* for the Amiga.

The game was originally mooted for Amiga release back in 1994 by Adventuresoft, but they decided not to on account of the "soft" Amiga market and moved their operation over to the PC. However, Epic have been in negotiation with them for the rights to the Amiga version for some six months now. Initially, Adventuresoft stated that there was unfinished Amiga source code which could be used as the basis for a new version of the game, but in the final analysis, none could be found. This means that the game will be based entirely on PC source code, but also has all the features of the PC version including full speech, although, unfortunately, this isn't done by the voice artist for the original *Simon the Sorcerer*, Chris Barrie.

Epic are looking for pre-orders, to ensure that the rampant piracy doesn't simply wipe out their ability to even recover their costs for the game which will be out at the start of February 2000. Vince Pike from Epic had this to say, "It's a ridiculous situation. We're not selling any *Virtual Grand Prix* because of piracy and *wipEout 2097* was even available on pirate bulletin boards before it was released." Words fail us when we consider what idiots pirates are. To anyone that's pirating software now we say, "You are really killing the Amiga. If you don't stop pirating Amiga software, no-one will write any and you won't be able to pirate it any longer. You are parasites on a sickening host." If you wish to pre-order *Simon the Sorcerer 2* and show your support for the Amiga market, then call Epic on 08700 110013.



The original was one of the most popular Amiga RPGs ever.



ODDS BODKINS!

According to Epic the minimum requirements to play *Simon 2* will be: AGA or RTG Amiga, 030 Processor, 8MB RAM, hard drive, CD-ROM drive, a degree in wizardry or witch-craft and of course your trusty mouse.

Millennium* disclaimer

Throughout this issue you'll notice numerous references to the millennium, all suffixed with an asterisk. Here is our disclaimer for it:

Although the majority of the media have proclaimed the year 2000 to be the start of the third millennium, there are hold-outs who stick to the technical explanation that this third millennium actually starts on January 1st 2001, based on the fact that the Christian calendar didn't have a year 0, unlike some others. This means that while the year 2000 remains part of the twentieth century, 2001 will start the 21st.

However, we at *AF* don't really care what explanation you choose to adhere to, whether you use the Christian calendar, or you just can't afford a party on New Year's Eve. We reserve the right to refer to next year as the new millennium, just as we will refer to the new year in *AF145* as a new millennium – a tactic we're fairly sure a lot of the media will use. Whatever happens, we hope you have a lovely time – this year and next.

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On the DD's

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Issue 130

Coverdisks
Countdown to satisfaction with T-zerø, PerfectPaint, iBrowse 2 demo, gallery pictures, game previews and more.



Issue 129

Coverdisks
Top transforming tools for Workbench, a galactic guide to the Solar System and warrior adventures with Alcandria.



Issue 128

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Reminisce with WoA speeches, update PPaint and rule the Empire with Imperator.



Issue 127

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Compress audio files with MPegENcGUI, plus details on free Internet access and fun with George.

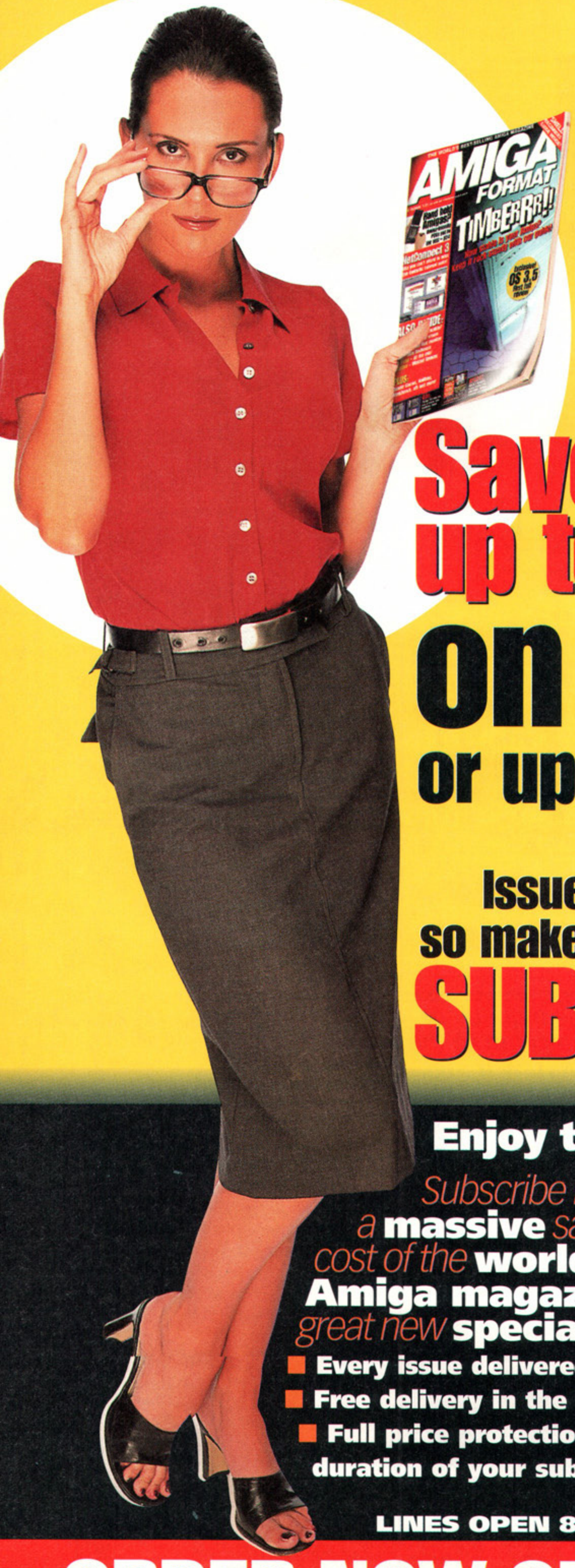


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Köln



It may have a new name, but it'll always be Köln to me…

The posters say, "Come to Cologne!", but if you haven't been before now, I'm afraid you've probably missed your chance. Although the three-day Köln show, now renamed from "Computer 'xx!" to the frankly boring-sounding and potentially confusing "Home Electronics World '99", is still popular (they had about twice as many people through the door on Friday than came to the entire WoA), the powers that be in Köln don't really want a computer show competing with their high-falutin' art extravaganza that runs during the same week, and dealers have been complaining for years about how expensive the show is to attend.

There may no longer be a queue of 100,000 users waiting to get in to the show but there are still new things to see and great people to talk to

It's not the end of German Amiga shows either – there'll be one near Bonn next year, but it is a sad reflection on the state of the market.

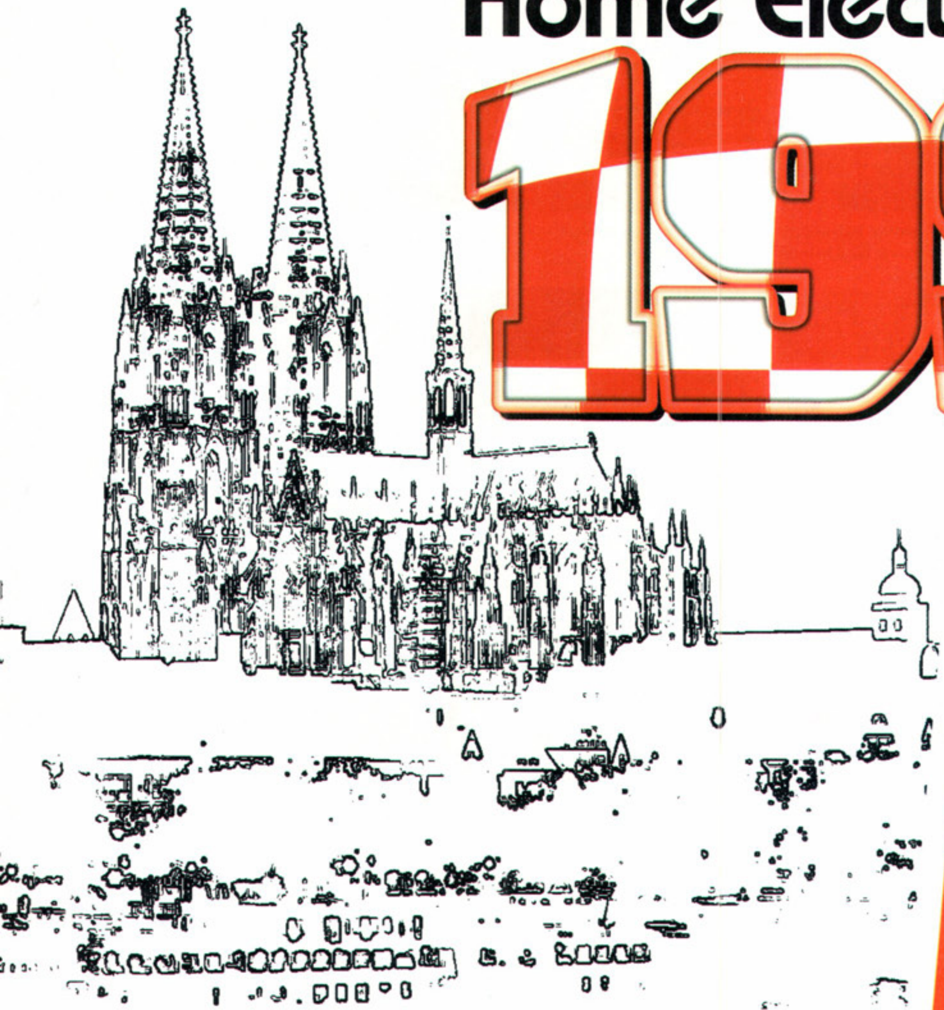
When I first visited the Köln show in a very cold November in 1990, there was a queue of 100,000 eager users standing outside on the Friday morning, only 50,000 of which could be let in because of fire regulations. Amiga users being the resourceful bunch they are, that didn't stop many from trying to use the fire escapes around the back of the venue, thus creating an even greater fire hazard. The show was in three halls, and the reason the corridors between the stands are so large now is a testament to the legacy of those early shows where you could literally pick your feet up off the floor and let the crowd carry you. Ah well. The good news is the fact that there were still interesting things to see and do and the show still offers good value for attendees with low prices, new things to see and some of the best people the Amiga market has to offer to talk to.





Below Left: Just some of the 150-strong beta-testing team line-up for a mug shot. Right: ACT's stand was always lively.

Home Electronics World 1999





The advertising for this year's show wasn't as extensive as in previous years.

GLOBAL GATHERING

The show is a big draw for people outside Germany too. Although the contingent from the UK was seemingly limited to the dealers who were showing at the messe, and the chaps from AmigaSoc who had to leave Saturday morning to attend a wedding (congrats Dan!), there were people from Denmark, Holland, Sweden, Switzerland, Spain, Turkey, Greece, France, Italy, Japan and the US and Canada there (they were just the folks I spoke to!), and people used the universal communication medium of pointing (but not clicking) if there was something they wanted but couldn't make themselves understood.

As far as some long-awaited announcements, or presentations, there were a few disappointments. No BoXeR, no phase 5 G4 cards, no Village Tronic ParaGlide Voodoo 3D add-on for the Picasso IV. Petro didn't make his usual speech (so there's no mpeg audio on the CD this time, dear reader), and even Annex were down to only three members. At times, it felt to me like there wasn't anything new because I didn't have armfuls of new products to carry the whole time (mainly because we already had many of the new products waiting for me at our office). That said, pickings were somewhat slimmer this year than last, with my bag not quite groaning at the seams on the journey home, my booty mainly consisting of CDs.

Continued overleaf ➡

ANNEX were reduced in number to three, but not in popularity, and photo opportunities were always snapped up.











Heinz Adreolla's amazing-looking Amiga took two months and 2,000DM to do.



Piracy is rife on the PC too, as this stand selling dodgy versions of Windows and Office proved.

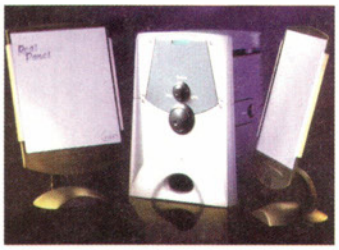


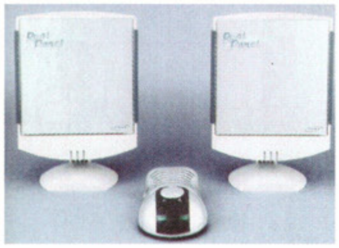
A new graphics tablet will be warmly welcomed by Amiga artists everywhere, especially with a mouse too.

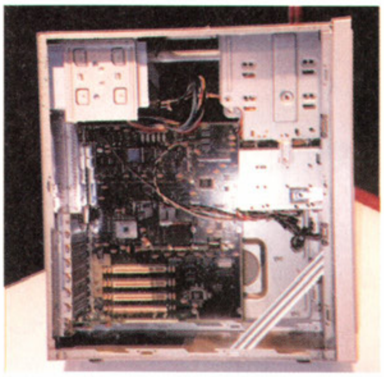




The show always brings out the DIY in Amiga owners. Jens Schönfeld's A1200 on the left and the first PPC card for the 500 on the right.







Is this the new face of Amiga? A low-cost, high-performance POP box from Korea?

WHAT'S NEW?

On the plus side there were many things either being shown or promised at the show. One real surprise was the AmiJoe G3 accelerator card from Met@box, which was shown in its final prototype form. Several people have one for testing, but details about its emulation of the 680x0 chip it lacks were scant, and Met@box haven't given a firm delivery date for it as yet. However, it is the first non-68k card out of the box so to speak and with phase 5's upcoming range of G4 accelerators, should breathe new life into our platform. At the moment, Haage & Partner's 68k emulation apparently runs at the speed of a 20MHz 040 on a 200MHz 604e, so while the speed increases for G4 over G3 won't be as noticeable as G3 over 604/3e, they should both give the emulation enough oomph to beat even the fastest 060 cards on the market, given the right software and a following wind.

Also present was a card listed as a PowerPC prototype for the A500 which included AGA on its rather large board. As including AGA on an ECS Amiga is an electronics impossibility, knowing onlookers soon realised that the DCE-built accelerator was a hoax, but still several more naïve onlookers went away with looks of wonderment on their faces.

Staying with the PowerPC for the time being, another surprise was to see the history of the Amiga on the Amiga stand. It wasn't really a history of the Amiga as it included pre-Amiga Commodores, like the 64 and PET, and missed out the 2000 entirely, but the last two cabinets had in them a CDTV and CD³², then a Walker (with a label saying "Prototype Amiga circa 1996") and an unlabelled tower case containing a motherboard like no other Amiga. If, as was obviously the intention, this box represented the future, what could it mean? A closer examination of the box revealed a set of PCI slots, SD-RAM and a processor card in a standard processor direct slot. Without too much trouble, the Amiga savants pronounced it a POP design – as detailed in last issue's news.

Other hardware making its debut at the show included the much-delayed appearance of the Power Flyer A4000 which had crowds clamouring for it

POP IS A HIT

You could get out *AF131* and look at page 6, but for the terminally lazy amongst you, here's the rough lowdown again so you can see why folk were so excited about it. POP stands for PowerPC Open Platform and to fulfill the spec a motherboard needs to be in ATX form (which at the lowest common denominator means it'll fit into a standard PC case and that it can be powered on and off through software), have three 33MHz PCI slots and one 133MHz AGP slot for high-speed graphics cards that could perform at more than four times the theoretical top speed of Zorro III. It also needs to have four DIMM slots, 10/100 MB/s Ethernet and Ultra DMA/33. If this doesn't sound exciting to you yet, perhaps on the grounds that it won't run Amiga software except through slow 68k emulation, think again. H&P are as excited by this board as the many Korean manufacturers who see a cheap (free) new design they can build low-cost Linux boxes with. They are rumoured to be planning a version 4.0 of the OS that would run natively on this box by next summer, but wouldn't confirm or deny it when asked.

Even if they wanted to it is unlikely that they would have contract to do so yet. What is confirmed however, is that a new version of the OS would be ready before Christmas. It doesn't have a revision bump but will be called the "Boing Bag" and will probably not consist of a complete new OS, but new versions of several parts of OS3.5. It will be free of charge. As for OS3.6, Haage & Partner are really keen to press on with new developments, but of course, don't have a contract for it yet. Nor will they unless the sales target for OS3.5 is reached. After all there's no point in making the OS at a loss.

Other hardware making its debut at the show included the much-delayed appearance of the Power Flyer A4000, which had crowds clamouring for it on the ACT stand. Also making its first showing were Kato Devlopment's Twister serial card for the A1200 which includes hardware handshaking, but otherwise looks almost









Users from all over the world came to see BTX, H&P and AmiJoe by Met@box.

Below: Now that's what I call a biiiig Boing Ball!







Above: Greg Perry with one of his many nieces.









The show is as much about socialising as it is about what goes on during the day. Over a beer, deals are made, stories about the Amiga swapped and bonds forged.

Below: Epic Marketing were just one of the companies happy with results from the show. Paul Burkey (on the left) was on hand demonstrating Foundation Director's Cut.



identical to the Silver Surfer we reviewed in *AF130*, and another new development from Kato – a Zorro adaptor for PCMCIA cards. This might not sound too interesting at first, but when you consider the sheer range of very inexpensive 100MB/s PCMCIA cards doing the rounds you'll see that it becomes far more exciting. The card also has a high-speed serial and parallel port on it and also has space for two A1200 clock ports allowing big box Amiga owners to fit low-cost A1200 soundcards to their machines. Although it's not available yet, it looks like being a good Amiga Christmas since it should be available from Power by about the time you read this. A price hasn't been set yet, but it'll probably be £80 or less.

SOCIAL LIFE

One of the best things about the Köln show is the fact that the division between "punters" and exhibitors is much slacker than at the World of Amiga show for instance. You can find yourself out for a beer with Petro and ANNEX, or talking to Stefan Ossowski in the corner of a restaurant over some nice food.

There's usually something going on of an evening. On the Saturday night there's always a coder's party, where the programming talent on the Amiga gather together to swap stories and ideas. The only problem is getting everyone into the bars!

The social aspect is extended at the show itself, where much emphasis is placed on the availability of food. There's a canteen in the entrance hall and dotted around the show there are places to go for a coffee or a beer, have a sausage and bread, or maybe a sandwich. The food in the canteen's pretty expensive, but then you'd expect that at a show.

INNOVATIONS

Another novelty was the computer-oriented NXT flat panel speakers being presented. These obviously weren't Amiga-specific, but looked great and sounded pretty good too considering their low output (3W). What's more, considering that NXT technology is expensive in the hi-fi arena, they were surprisingly cheap to buy at only 69DM (about £23) for the low-end and 169DM (about £56) for the high-end model. As you'd expect from us, we'll be bringing you a review shortly, but it seems that wherever you went in the show there were exhibitors impressed enough with them from the get go to purchase a set immediately.

In case you don't know, NXT speakers are flat panel speakers that have none of the usual woofers, tweeters or slimline salad dressing. They work by vibrating the front panel, but are so thin that you can get kits to conceal them in picture frames behind a picture, or have a nice design painted onto them. When I say thin, look at the external speakers you are currently using on your Amiga (assuming you are), and imagine a set of speakers no thicker than a PCMCIA card hanging off the side of your monitor instead.

The major problem with NXT speakers right now is the fact that their bass response is hopeless, so I fully anticipate that the high-end model with its subwoofer will provide a much better bet for anyone wanting these high tech beauties for their desks. At the moment, the factory making them has no OEM in the UK, but we're sure that'll change very rapidly.

One item that caught my attention, on the Wacom stand on the Friday of the show but sold out by the Saturday afternoon, was the new Graphire graphics tablet cum mouse-and-mouse-pad. Haage & Partner are working on a driver for the Amiga for it right now and hope to have support for all its functionality including tilt and eraser functions for Art Effect and any other software that supports H&P's tablet API.

SOUGHT-AFTER SOFTWARE

On the software front there was plenty to see. Haage & Partner were busy demonstrating *Tornado 3D* version 3 (yes, we will have a review soon, honest) to a crowd of interested onlookers throughout the whole weekend, and while many Amiga

Continued overleaf ➡





Some users came all the way from Japan to say hi. Konnichi wa, watashi no tomodachi!









Heretic II was pulling in the punters all weekend. Right: Jens Längner (P96Speed) and Jens Tröger (InstallerNG) pose with their favourite mag.







Website amiga.news had representatives at the show. You could recognise them by their custom nail varnish...

Far left and below: Interestingly old Amiga companies ProDAD and Macro-System had stands at the show – nothing for the Amiga, mind.



cynics think there's no room in the market for high-priced professionally produced software with a printed manual these days, plenty seemed to be leaving the H&P stand clutched in the hands of 3D enthusiast Amiga owners. *Amiga Writer 2* was also promised for the near future so those that bought v1.2 should be rejoicing (it was put on hold for OS3.5). Also, *Art Effect* will be getting a new update shortly, although there wasn't much news as to what was to be included. *PageStream 4* was being demonstrated and although the proposed HTML and PDF export functions weren't 100 per cent working at the time, it still looked even more rock solid and professional than before.

WipEout 2097 was being played on several machines in Köln, not only at the show either judging by the number I saw going into plastic bags and rucksacks, and I spoke at length to the Frieden brothers. They are the main coders for Hyperion software and they were demonstrating *Heretic II* on two machines on the Titan stand. *Heretic II* is looking fantastic at this stage. It's only running on a software 3D renderer rather than using 3D hardware, but even so, is managing to achieve rates of more than 40fps at 400x300 on a 200MHz PPC. In fact, because the frame rate slows significantly during periods of intense on-screen action, the authors are strongly considering putting a frame speed limiter on the game so that the difference between the maximum framerate and the minimum, which is still more than 15fps, isn't so noticeable. The best news of all is that, subject to Activision giving their approval for the conversion, *Heretic II* should be available before Christmas. Perhaps even better for the majority of us is that they are also thinking of doing an 060 version for those without PowerPCs, but you will need a 3D graphics card to be able to do this,

Work is progressing well on the much acclaimed Shogo; the Friedens hope to have it completed, subject to approval, by the end of January

and don't expect it to run at a high resolution, or at top speed. The engine for *Heretic II* is the *Quake II* engine – considerably advanced from the original *Quake* engine, and the central figure for *Heretic II* has more than 700 polygons alone – in total most scenes in *Quake* only consist of about the same number. Still there's always the possiblity of completely hiding the player model by zooming the camera in to take the same space, but whether Activision will approve of changing the game from a third person perspective to a first is something to be pondered.

LICENCE TO THRILL

Obviously, they haven't just been working on *Heretic II* either. As has previously been announced in these pages, Hyperion also have a licence for *Shogo* – the mech-em-up that has received ubiquitous acclaim from the PC gaming press. Based around the hugely powerful Lithtech engine, it was always going to be tough to port to the Amiga, but work is progressing apace and the Friedens hope to have it completed, again subject to approval, by the end of January. More good news is in the fact that the licence that Hyperion signed for *Shogo* includes the right to use the Lithtech engine for other titles, and Hyperion may well have the licence before long to port the Lithtech 2 engine to the Amiga too. However, this all depends on getting approval for the first two games and for them to sell relatively well, not an easy task in the Amiga market, especially when that market is made smaller by the twin criteria of the user having to have a PowerPC and a 3D graphics card.

Still sticking with games, Epic Marketing had Paul Burkey on their stand showing off *Foundation Director's Cut*. It may be old news for us, but proved incredibly popular with visitors to the show





Left: Martin Steigerwald shows onlookers (well, most of them) OS3.5. Above Greg Perry tries out the latest speakers and below, he and Martin hug a tree together.



Maciek Binek of Elbox, Thomas Dellert of DCE and Tony Ianiri plot to take over the world with 060 and IDE accelerators!



The Schatztruhe stand was always busy and had Amiga celebrities to help out...









Top left: Alan Redhouse makes sure no-one pinches his infra-red keyboard, Urban Müller holds firm to Pandarine and the Frieden brothers pose for us.

who bought out Epic's complete stocks of the game. On the stand behind theirs, sometime Epic Marketing partners APC & TCP had a space game called *Phönix* on their stand. Unfortunately, although it looked incredibly impressive, with detailed models flying around extremely smoothly, it looks unlikely to ever be finished since the author is working on his own and now has a full-time job to keep him busy.

AROUND THE STANDS

Not really a game, but certainly game-related, Sam Jordan was demonstrating his Warp 3D system on the Haage & Partner stand and showing off the power of *wipEout 2097* running under it too while people looked on, commenting that it looked just like the PlayStation version, only higher resolution.

Away from the gaming aspects, RBM were showing off *ScanQuix 5* and *Photoscope 5* for the Amiga. Both products are designed to make running a scanner on your Amiga as easy and powerful as possible and while *ScanQuix* supports many different makes, *Photoscope*, by the same authors, concentrates on providing absolutely top-notch support for just one range, the UMAX SCSI scanners which have been given high review scores everywhere they've gone.

Aaron Digulla was present as always and was actually showing a working version of AROS on the Amiga Club im BTX stand. At the show, it was running under Linux M68k, and was showing a variety of Amiga programs being run.

On the Schatztruhe stand, Achim Stegerman was showing off his creation, *Digital Almanac II*, which is an impressive astronomy program you can expect a review of next issue. Thankfully for Achim, support for computer controlled telescopes may well be added to a future version thanks to Greg Perry of GPSoftware being something of an amateur astronomer himself and offering the solution to telescope-less Achim.

Sticking with Schatztruhe, but moving away from software back to hardware, Heinz Adreolla's impressively customised Amiga tower must have been the most-photographed object at the show apart from the POP motherboard and possibly extreme close-ups of ANNEX. The tower, which took two months to complete and cost more than 2000DM (roughly £670) to do, has a PowerPC processor, an EZ105 SyQuest, CD-ROM writer, CD-ROM drive and two floppy drives, all painted and varnished to match the rest of the tower and a revolving boing ball in the front.

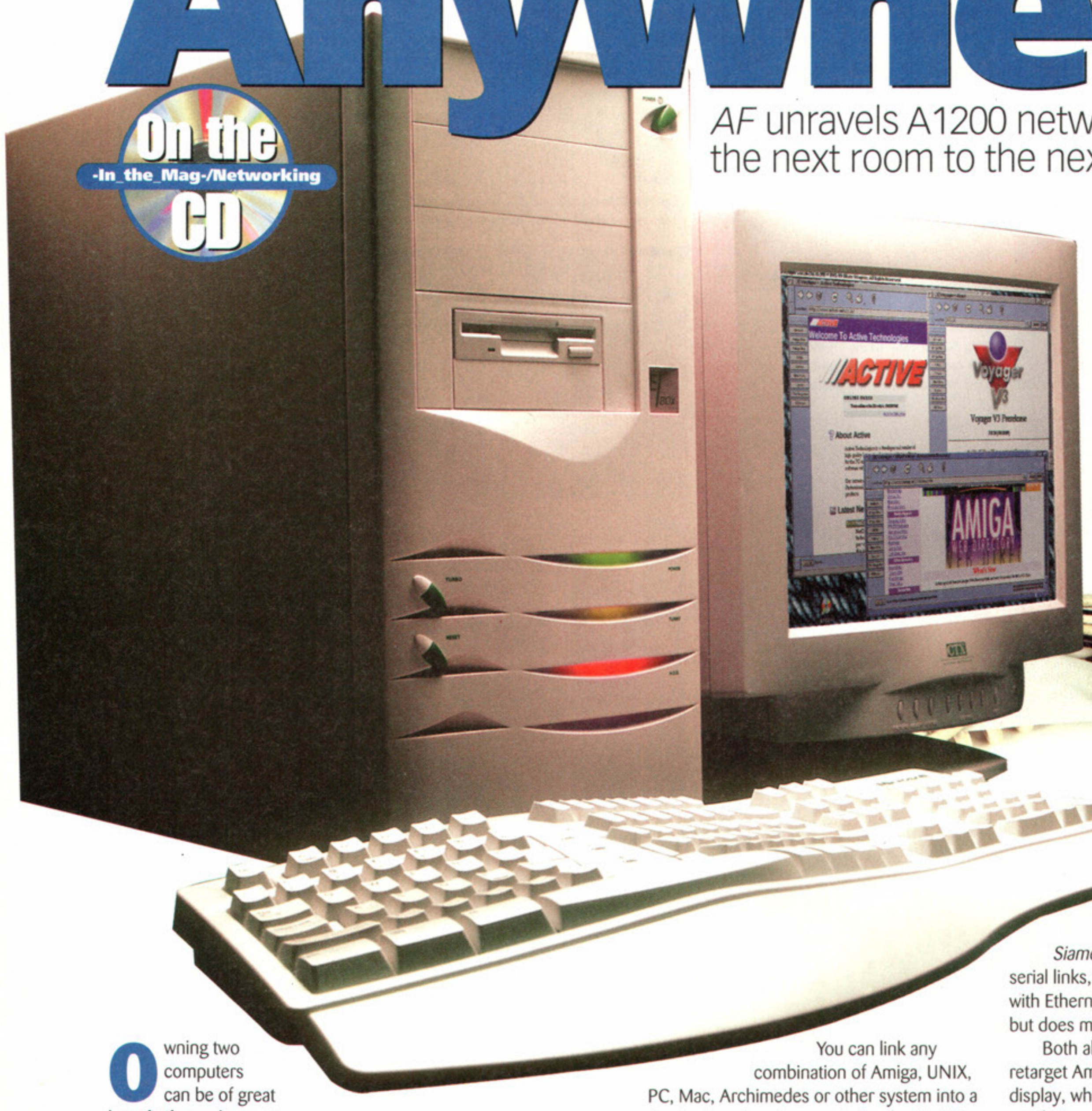
Alan Redhouse of Eyetech was also gathering much interest. Whether it was for his impressive 19" rack mount-based Amiga (which also has a PC motherboard included in the mix), or the tiny LCD screen in a wooden picture frame which was also attached to it is not certain. One thing's for sure – even if you are used to straining your eyes on a 12" portable you'll still have a job getting used to the three inch screen used on this monitor! As Alan said, it's of no use for using Workbench, but might make a nice executive toy, showing a slideshow of pictures of the wife and kids (or possibly mistress) on a busy vice-president's desk.

FUTURE ECHOS

Overall then, Home Electronics World '99 was an interesting show. There were a lot of people wandering around depressed because there has been no firm statement of direction from the powers that be, but even so there were plenty of new products to see, and also plenty of hope for the future in the form of the numerous PowerPC developments going on. It's interesting that the direction that Joe Torre perhaps erroneously announced some two years ago now should be the one we're finally taking, but we at *AF* feel it's the right move. Here's looking forward to the next German Amiga show, where we hope to be able to bring you news of OS4.0, a new PPC-based Amiga built on a POP motherboard, the latest 3D games and much more!

Ben Vost

Network to Anywhere



On the CD
-In_the_Mag-/Networking

AF unravels A1200 networking from the next room to the next world



Friendly icons make Envoy configuration a cinch.

Owning two computers can be of great benefit if you choose to network them with PD or commercial software through any convenient pair of ports. Whether you want to share files, reduce copies or ease backups, networks are useful – you need no longer ferry floppies back and forth in the old 'sneakernet' approach.

The Internet makes people keen to link all their machines to the world outside. There are ample good combinations and many pitfalls. This feature explains the options that make Amigas a peer with any wired computer in the world.

Options range from a £1 serial cable, adequate for remote input and file transfer at modem rates, up to £100 per station for *Envoy*, CNet and the A1200 Reset fix. That makes Amigas almost interchangeable in continuous use, ideal for collaborations.

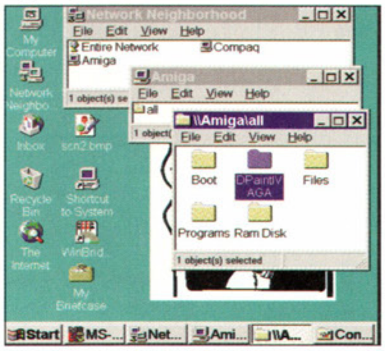
You can link any combination of Amiga, UNIX, PC, Mac, Archimedes or other system into a single shared environment. *Samba*, *NetFS* or *Envoy* talk Internet Protocol to a remote file system. *Samba* emulates a Windows 'standard'; *NetFS* is a UNIX favourite which is freely available on other platforms and maps a great deal more closely to the Amiga way of doing things.

With the right software you can link any combination of Amiga, Unix, PC, Mac, Archimedes or other system into a single shared environment

Proprietary Amiga protocols are discussed later. The best use *Envoy*, the Commodore-endorsed network package which supports automatic disk change recognition, Amiga file types and permissions.

To share screens as well as files and printers, run Mac emulation or close-couple your Amiga to a PC with commercial *Amiga Forever* or *Siamese* packages. These support serial links, but they're much more useful with Ethernet. *Siamese* is harder to set up but does more once you've got it working.

Both allow file sharing; *Siamese* can retarget Amiga graphics onto the PC display, while *Amiga Forever* runs UAE emulation, using the Amiga as an adaptor for 880K floppies which the PC cannot otherwise read. Cloanto's *Amiga Explorer* software extends Windows9x to 'explore' any Amiga drive.



Samba shows Amiga drives on a Wintel laptop.

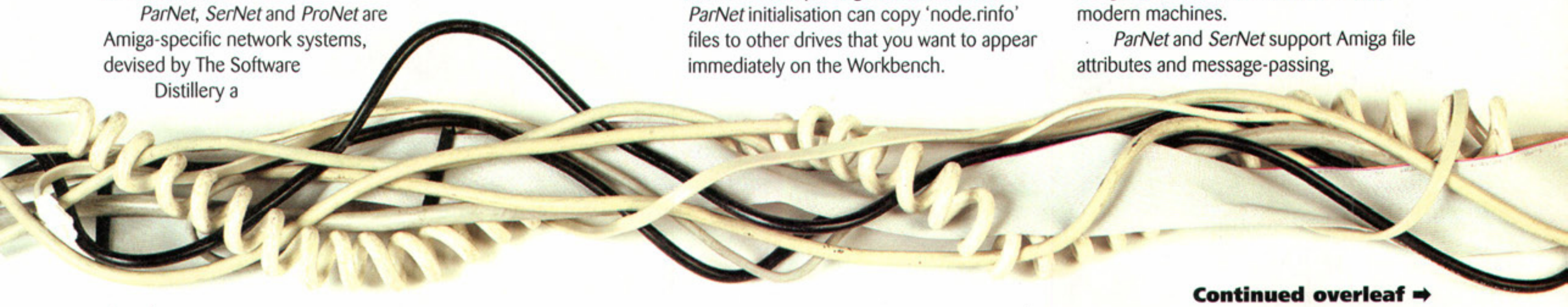
BARGAIN NETWORKS

The most powerful way of networking your Amiga is still Ethernet, which supports high speeds, long cable runs and can link up multiple machines. Ethernet has traditonally been available for big box Amigas only, but standard PCMCIA cards can be used on A1200s and A600s with some ingenuity. See pages 24-25 for reviews of two new card bundles from Eyetech and Power. While the cost of Ethernet for the Amiga has fallen, there are cheaper methods available to connect Amigas and PCs.

Two terminal packages can be linked by a null modem cable. If both machines could access the same Bulletin Board, they could just as well talk directly. Most terminals support ZModem protocol, including Amiga *NComm* and *Term*, which allows data compression, error detection and correction.

More specialised utilities come with matched 'servers' to run at each end of the link and are easier to set up as they do not bother you about the non-existent modems in a serial network. *EasyTransfer*, *PC2Amiga*, *TwinExpress* and many more can be found on Aminet .

ParNet, *SerNet* and *ProNet* are Amiga-specific network systems, devised by The Software Distillery a



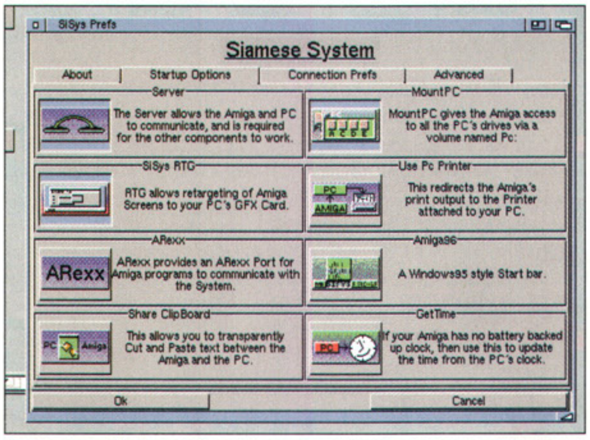
decade ago. *SerNet* works with any serial port and a null-modem cable, a standard seven-wire serial connection known as 'Serial Laplink' in PC shops – but check their plugs match your ports. One wire is earth; two more let both ends talk at once; the other four say 'please' and 'thank you' both ways to ensure reliability.

Serial cables use from three to seven wires and parallel from nine to 25, both through 25-way D plugs or sockets. You can switch these with cheap mechanical switch boxes, but intelligent printer switches won't like the direction changes and software could become confused when another program adjusts the hardware after they thought they'd set it up. Networks need a dedicated port at each end.

PARNET

ParNet is dedicated to the Amiga bi-directional parallel port, and a custom 16-wire cable, available from Epic. It's connected straight through but for two extra links bridging pins 10 and 13 both ends and pins 1, 14-17, 23-25 disconnected.

Such networks mount a drive called NET:, with the volume name Network:. Drives on the remote machine appear there as you refer to them, rather like deferred assignments. At first you only see RAM: and SYS:, two paths guaranteed to exist. *ParNet* initialisation can copy 'node.rinfo' files to other drives that you want to appear immediately on the Workbench.



Siamese Systems have plentiful networking options and can retarget graphics from Amiga to PC.



ParBench is a modern installer for the venerable ParNet.

ParNet is less robust than TCP/IP networks. If you reset one end of the link you block access to partitions with outstanding 'locks' where the other machine was using them. You may dodge this by ASSIGNing new names, but eventually you'll need to reset to bring both back into sync.

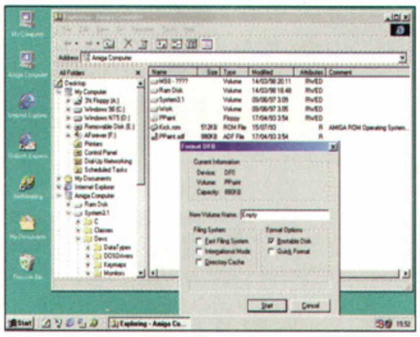
THREE WAY ACTION

ParNet is most common between two Amigas, but the protocol allows custom cables that link three or more Amigas in parallel. The maximum recommended cable length is 10 metres, though five is a safer bet – you're using a printer port, after all.

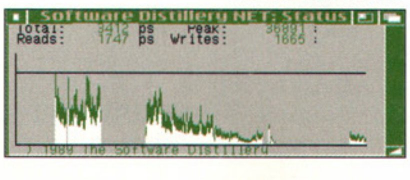
Data transfers are eight bits wide, using four control lines and five earths. All stations share the available bandwidth, ranging from 20K per second on old Amigas to 40K or more between more modern machines.

ParNet and *SerNet* support Amiga file attributes and message-passing,

Continued overleaf ➡



Cloanto's Amiga Explorer lets you format Amiga drives remotely!



ParNet status prefers you to use the old Topaz font.

SAMBA

In UNIX and IBM-land SaMBa stands for Session Message Block, not to be confused with the recent Amiga football game. For that matter, PCMCIA CNet cards are unrelated to the old Amiga CNET bulletin boards. *Samba* is a UNIX package that speaks IBM's LAN-Manager protocol, like Windows 3.11 and subsequent nineties versions. '*Dave*' is a commercial version of *Samba* for Macs.

Power's Amiga PD version of *Samba* works, but it's torpid. A dozen or more messages must be exchanged for every file transfer, however small, so *Directory Opus* file transfers are painfully slow. Disappointed that it was taking about a second to copy each small file between a hot 68040 and 75MHz 68060, I called the estimable Salvatore at Power Computing, whose company-wide *Samba* network includes A1200 and A4000 Amigas. He confirmed my findings, reporting that it took one and a quarter minutes to copy 51 files, totalling just 116K, between RAM drives on 68030 machines.

If you copy lumps of 50K or more, *Samba* comes closer to the speed of the network – my relatively fast Amiga 1200s got about 100K per second at best, for large file transfers. *Samba* works okay for this sort of thing and Power are to be commended for configuring a package which gets Amigas and PCs networking together without extra expense, but it's PC-sluggish if you want to browse remote directories over Workbench – you'd be far better off with *ParNet* or even *SerNet* for the small transfers of icons and directory data which Workbench expects.

The only reason to tolerate *Samba*'s sloth on small files is its compatibility with the LAN Manager protocol. If you need to link Amigas and PCs, *Samba* is the safest option because the PC end should be set up right from the start; that's the most painful place to have to fiddle around, otherwise.

Power Computing ship a mid-nineties port of *Samba* with Helsinki Tech's *AmiTCP 3*. This is close to the UNIX code, reliant on *IXEmul* for emulation in the Amiga environment. If you own *AmiTCP 4* or better – *Genesis* is paradoxically the latest incarnation – you should seek out Olaf Barthel's more Amigafied version. It's smaller, faster and more stable, because it runs without *IXEmul* and has been partly recoded by someone who understands Amigas. *AFCD48* saves you a 2.3MB download.

but not disk changes or notification. *ParNetKeys* allows keyboard and mouse control redirection over the network. The source code is freely available, so minor variants abound.

ProNet uses the same cables, but is newer, more flexible shareware. It's modular, recognises disk changes and supports GVP and Multiface parallel ports as well as the motherboard one. It requires Kickstart 2 or 3. *ProNet* allows messages, real-time chat, and remote commands, even over the phone. If you're not afraid of shell commands to set it up, it's far nicer than *ParNet* between modern Amigas.

NETWORK PC

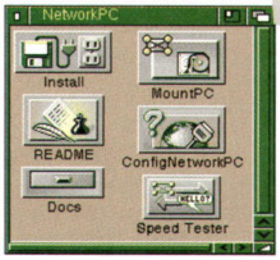
PC2Amiga is a serial and parallel file server from Aminet, bundled as *Network PC* with a custom cable, Amiga and MSDOS disks by Weird Science. The PC runs as a slave, giving the Amiga access to all its drives. The PC needs at least MSDOS 6.

Parallel port transfers use four wires each way, boosting speed past 20K per second, while temporarily throttling the Amiga side. Trimming the transfer priority leaves more time for other tasks but then *Network PC* times out on a heavily loaded system. You can configure the maximum packet size, from 312 to 8192 bytes, and the number of retries before an error is



reported back.

PC2Amiga has friendly installer scripts, clear AmigaGuides, commodity and Windows95 file name support. It comes with good utilities. I use *NetPCspeed* for *Envoy*, *Samba*, *ParNet* and *NetFS* tests, as well as timing *PC2Amiga* transfers. It has some rough edges, but these are well explained.



With PC2Amiga you can make an IBM your slave.

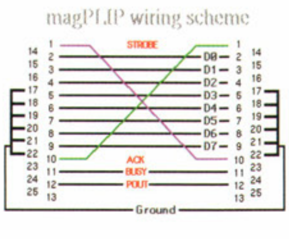
SERIAL OPTIONS

NCP is the networking scheme designed for Psion 3 notebook computers, but Aminet's *AmigaNCP* works well over a serial link between two Amigas. *NCP* implementations for other computers include the shell MCLINK.EXE for MSDOS PCs and versions for Apple Mac and Acorn Archimedes, so it's a contender to link any pair of those machines whether or not you have a Psion.

AmigaNCP is concise and complete, with a print and file server and informative debug monitor. It supports long file names but requires odd punctuation, so you access SYS:S/Startup-Sequence on the remote machine by chanting: REM::\\SYS:\\startup-sequence – ugh!

TwinExpress offers fast serial transfers between Amigas or an Amiga and a PC connected with a null modem cable. It bangs the serial port hardware at both ends, allowing speeds up to 11K per second even on fairly basic machines. *TwinExpress* supports PC and Amiga wildcards, and translates between ANSI and MSDOS character sets. Its main limitation is that it runs as a shell, rather than a file server, so you have to use its own commands rather than your usual application file requesters.

Amiga PLIP cables almost match ParNet, but are nothing like Laplink.



INTERNET PROTOCOL

TCP/IP stands for Transfer Control

NETFS

NetFS is another package to run on top of TCP/IP, and the file system of choice for networking Amigas on a tight budget. It lacks some Amiga niceties – when you change disks, the old name and icon remains on remote systems, though you can access the new contents by clicking therein. File links are supported; these short cuts across (soft links) or between drives (hard links) were a late arrival in AmigaOS, and are a useful UNIX-style alternative to ASSIGN.

User names and file protection are supported, but *NetFS* is not a secure system. As with *Samba*, a competent TCP/IP hacker could get and use anyone else's password without much difficulty. Do not confuse *NetFS* with the UNIX-compatible *NFS*, which could netmount the whole 400GB Sunsite, including all of Aminet from 193.63.255.4:/public – you need Linux or NetBSD to do this, although a true Amiga NFS has been long-awaited. For now you'll have to do this with FTP.

The big advantage of *NetFS* is that it has lower overhead than *Samba*. *Opus* copies small files 10 or more times faster over the same network hardware and large transfers are completed in 60 per cent of the time. This is still short of the potential of Ethernet, rated at 10Mb per second, but at least we're in the right order of magnitude – well tuned Zorro and PC Ethernet systems manage a few hundred K per second over this type of Ethernet and the old TCP/IP stack, PCMCIA cards and CNET driver take their toll alongside *NetFS*.

Workbench windows open and fill with icons at acceptable speed – faster than from most CD-ROMs but slower than a decent hard drive. *NetFS* is a bit quicker than *ParNet*, but small file speed is not much greater – each TCP/IP transfer is complicated with overhead to allow for packets being re-ordered or machines coming and going while the network as a whole stays up.

Power Computing's installation supports *NetFS* if you remove a semicolon from the amitcp:db/services file, before the line "amiganetfs 2500/tcp", and add lines like "netmount 192.168.0.1 sys: NetBoot:" for each remote drive you wish to use. Salvatore recommends this to people who want to link Amigas rather than PCs. You can run *NetFS* at the same time as *Samba* for the best of both worlds.



Startup script for TCP/IP 3 and NetFS

```
assign AmiTCP: sys:AmiTCP-3.0b2 ; Shorthand for TCP/IP location
path AmiTCP:bin add ; Add TCP/IP files to default command path
run >nil: AmiTCP:AmiTCP
WaitForPort AMITCP ; Wait till TCP/IP is up and running
run >nil: ifconfig cnet0 192.168.0.1 netmask 255.255.255.0
mount tcp: from AmiTCP:devs/Inet-Mountlist
run >nil: inetd ; Start daemon so others can access this machine
; Mount partitions or drives on other machines via NetFS
netmount 192.168.0.2 sys: boot2:
netmount 192.168.0.2 ram: Ram2: ; etc, etc!
```

An extended version of this script appears on *AFCD48*.

Protocol/Internet Protocol. It's the standard for global networks, devised by the cold war Advanced Research Projects Agency. *AmiTCP* was the first Amiga implementation, based on UNIX code, followed by *Termite* and *Miami*.

TCP is configured by text files, but *Genesis* and *Miami* have front ends to simplify setting these up. Lacking these, try to modify an existing setup, be systematic and prepare for a lot of reading. TCP/IP is powerful, but not simple.

TCP/IP is the scaffolding of the Internet, a reliable way of transmitting 'packets' of data over any connection. Ethernet is ideal, but TCP/IP can run over serial ports (SLIP) or parallel (PLIP), though the parallel cable is wired, unlike Amiga-specific *ParNet* ones. Many other protocols, from UTP timing to HTTP web access and innumerable network file systems, run on top of a TCP/IP stack.

MAGIC NUMBERS

Every machine on a TCP/IP network has an unique 32-bit identifying number, split into four bytes, 0 to 255, separated by dots. A 'domain name server' translates names like www.amiga.com into the corresponding numbers, but you can use the numbers directly for web and FTP access if you know what to type.

The limit of 4.3 billion stations upset

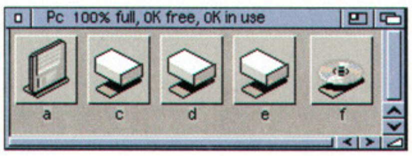


megalomaniacs so the IP engineers are expanding it to 128 bits, for 341, billion, billion, billion, billion addresses! Most local networks get by with 254 from a group of about 65,000 reserved for local systems not visible to the wider Internet. An Amiga with TCP/IP is a full global peer if online, or a 'closed net' with all the Internet capabilities.

Out of the four billion possible Internet numbers, about 65,000 are reserved for small local networks. Other reserved groups allow subnets up to a few million. These numbers can be reused in any local network, because they are not visible outside. They start 192.168 followed by two-byte values – I use 192.168.0.1, 192.168.0.2, and so on.

There's no need to change earlier numbers unless you have more than 254 stations. IFCONFIG sets your machine's address and network adaptor, once TCP/IP is running. My example script is enough to use *SynClock*, *Telnet*, *FTP* and *NetFS* over *AmiTCP 3* or later.

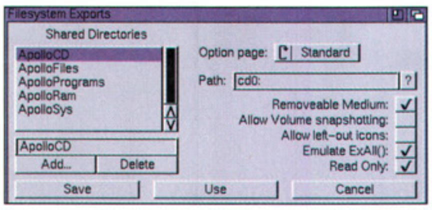
The simplest TCP/IP command



Shared PC drives in an Amiga Workbench window.

is PING, which sends empty packets to a remote address and checks that they return intact. PING is the basic test of a connection between machines. If you can't PING it, it's not connected!

0 is conventionally assigned to 'the



Export options tell Envoy which drives to share.

network', rather than any specific machine; the last number 255 is reserved for 'broadcasts' to all machines in a subnet, associated by a netmask which has zero for 'don't care' bits. The normal local net mask is 255.255.255.0, so if you PING 192.168.0.255 you'll get replies from yourself as well as all other machines with numbers starting 192.168.0.

It's vital that every station has an unique number, just as on a SCSI chain, but that's just the start. You need matching file system software at both ends of the link to manage necessary abstractions like named files, dates and times, print spools, commands or key-presses. The 'file system' boxes summarise your options.

IP ROUTING

Any machine can reach any other on a TCP/IP network, but local IP numbering means messages from the outside world must be forwarded by the machine with a direction connection. If you want to use Amiga Internet programs via another computer that's already connected to an ISP, you need a program to mediate between all three.

Windows users can run the *Wingate* or *Sygate* to forward messages. UNIX needs no separate program to do IP routing.

NetBSD and Linux have gateway and proxy serving built in, known as NAT or IP masquerading. *AmiTCP* and the full version of *Miami* can do routing on Amigas.

PING FOR TELNET

You can run basic services like PING over TCP/IP, and some more esoteric ones like *SynClock*, which uses the TCP: device to open an NTP port in Network Time Protocol, and a mixture of ARexx and shell scripts to read the time on a remote machine and update the local clock accordingly. *SynClock* 192.168.0.3 reads the time from local station 3 – append SAVE to update your machine's clock.

Telnet lets you type commands on one machine to run on another. To open a shell on the second local machine, type TELNET 192.168.0.2, then the user name telnet and password Telnet, to log on.

The remote shell is effectively restricted to command-line applications because you lose control as soon as a command starts up a task on the remote Workbench or a custom screen. Thus *Bustest* smoothly reports the speed of remote memory in your shell window, but *ED* is useless because you can't type anything into the editor once it's started up.

You quit *Telnet* with the usual ENDCLI.

Continued overleaf ➡

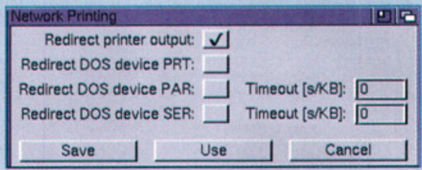
ENVOY

***Envoy* is the ultimate in Amiga networking. It supports 'notification' so file views are updated automatically as applications create or move data, disk insertions and removals are promptly recognised, and Amiga file types and filenote comments are faithfully preserved.**

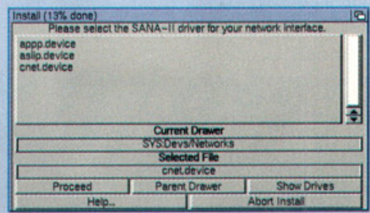
***Envoy 3* (*AF120*) offers spooling, mouse and keyboard redirection and even distributed ARexx commands! *Envoy* supports any SANA II compatible connection, independent of TCP/IP file permissions through Aminet's *MultiUserFS*, custom directory paths and write-protected paths which are handy when sharing removable media.**

***Envoy* uses Internet Protocol packets with different contents from the UNIX TCP/IP protocol stack, while sharing a common addressing scheme. Since release 2, SANA II drivers can run both at once through a given interface, *Envoy* sharing the link alongside *NetFS* or *Samba*.**

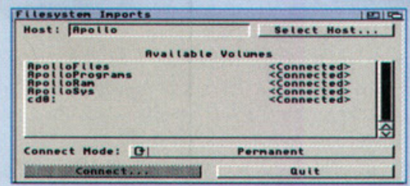
If you want a fast, seamless Amiga network, *Envoy* is matchless. It's distributed by Aminet benefactors Schatztruhe and costs £40 from Weird Science in the UK. It richly deserved its *Format Gold* award, being easy to install, well documented and supported. It does the basics as well or better than other file systems, and much more besides.



Envoy offers four types of network printer redirection.



Envoy works with SLIP and PLIP as well as Ethernet.



Configure remote drives by 'importing' them with Envoy.

TABLE 1 - ENVOY ETHERNET SPEEDS

SYSTEM	SPEED	SYSTEM	SPEED
68020 to 68060	254 K/s	68020 from 68060	334 K/s
68040 to 68060	337 K/s	68060 from 68040	384 K/s
68060 to 68040	374 K/s	68060 from 68040	346 K/s
68060 to 68020	307 K/s	68060 from 68020	228 K/s

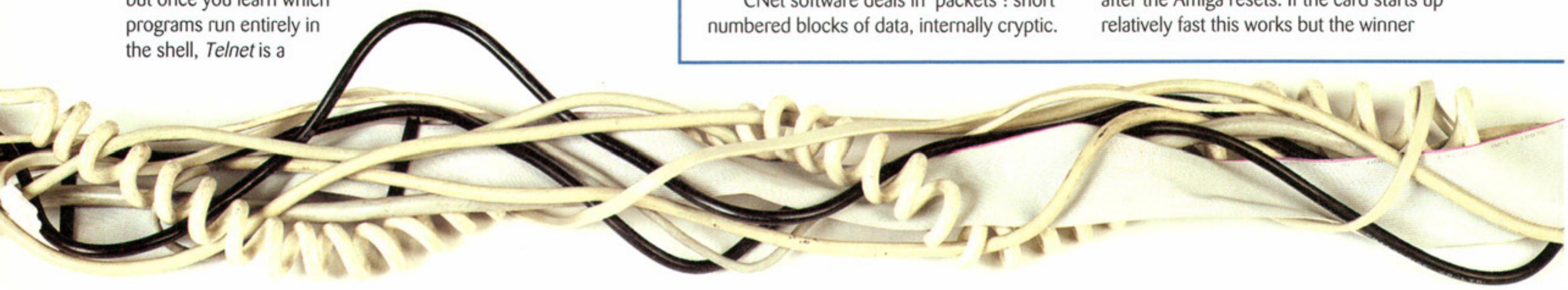
Testing cnet.device between PCMCIA A1200s CPUs: 14 MHz 68020, 40 MHz 68040, 75 MHz 68060.

TABLE 2 - ETHERNET STANDARDS

STANDARD	PLUG	CABLE	REQUIREMENTS
10-Base-T	RJ45	Cat-5	Hub if more than two boxes
10-Base-2	BNC	Coax	Termination, may bottleneck
10-Base-5	D15	Thicknet	Repeater per box, obsolete

'Standard' Ethernet cables might resemble US phone wire, UHF TV flex or yellow water pipes!

It's not unusual to have discarded shells lying around if you experiment with commands and lose control by accident, but once you learn which programs run entirely in the shell, *Telnet* is a



useful way to monitor or off-load rendering or compiling effort to a remote system.

All TCP/IP stacks support File Transfer Protocol, whether from a shell with *NCFTP*, a dedicated GUI application like *AmFTP*, *FTPmount* or *Opus 5* extensions, but it's limited to copying whole files around and so is less versatile than real file systems. File Transfer Protocol struggles with random-access and Amiga-specific file attributes. It's fine for wafting archives back and forth, but if you want access to remote drives as if they were on your local machine – from Workbench and applications as well as the shell – you need a file system like *Samba*, *NFS* or *Envoy*.

Simon Goodwin

WEB LINKS

There's vast amounts of network-related material on *AFCD48* and Aminet:

Envoy and NetworkPC software: http://www.weirdscience.co.uk
Windows Amiga Explorer: http://www.cloanto.com/amiga/forever
Power PCMCIA Networking: http://www.powerc.co.uk
PCMCIA Ethernet, Siamese, Miami: http://www.eyetech.co.uk
Help: http://home.intekom.com/jacog/howtonet/dullmodem.html

Eyetech CNET PCMCIA

Eyetech's CNet package comprises a largely empty 880K floppy with two versions of the device driver, the unavoidable PC disk, card and manual, a silver T-piece for terminated coaxial cable, and an interface box with BNC and RJ45 sockets. Two lights on this box indicate UTP linkage and dataflow through one or other socket, just like Power's variant.

The wiring options are listed in the table. All allow long cables, at varying cost. Coax is being displaced by twisted pair UTP, but that requires a 'hub' to connect more than two stations.

Aminet's cnet.device is free and fine as far as it goes. It gives a consistent hardware-independent interface to one or many AmigaOS tasks, complying to the Amiga standard SANA II (Standard Amiga Network Architecture). It neatly brings virtually all resources available in a PCMCIA 'cod-ISA' network card to the Amiga. It offers optional diagnostics and comes with clearly annotated assembler source code; you won't need either but they are well done anyway.

CNet software deals in 'packets': short numbered blocks of data, internally cryptic. Everything else can be interpreted by software already written for modems, ISDN, Zorro, serial or parallel links, because the Amiga is a device-independent system – all devices share code so application programs can use them identically regardless of speed or location and the minimum best-tested code does the maximum work.

CNet is just the start. Eyetech expect you to roll your own file system, or buy a ready-made Ethernet application. They originally sourced CNet cards for *Siamese* Amiga/PC systems, which use Ethernet for files and graphics.

THE RESET BODGE

The cnet.device cannot solve one A1200 hardware problem. Hot plugging works fine on the A600, but the A1200 omits a pulse the PCMCIA card expects, to ensure it starts correctly. One way to provide the card with the expected pulse is to solder a small electrolytic capacitor between the Gayle input and the power supply so that a signal builds up in a fraction of a second after the Amiga resets. If the card starts up relatively fast this works but the winner

Power Ethernet

Power Computing's Ethernet adaptor plugs into the PCMCIA port on the A600 or A1200. It is keenly priced under £50, including four floppy disks of software – three of them Amiga-specific, and adaptors as well as the type 2 PCMCIA network card itself, but cables are extra.

A 15-way connector on the outer card edge accommodates a latching plug for the standard Ethernet sockets. These are fitted in a small plastic box with two lights on it, as well as an RJ-45 telephone-style socket and the older BNC bayonet-fitting UHF connector. The Ethernet connections are standard so Power's pack will fit happily into existing Amiga, PC, Mac or UNIX networks.

It's up to you whether to use the new telephone-style socket or the coaxial cable. Either way you need to provide your own network cable. A three-way T-shaped adaptor lets you daisy-chain coaxial cables. Both ends of such a network must be terminated, so the T-piece is essential. The Power Computing bundle does not include the terminators required at each end of the chain, but these are readily available 50 Ohm resistors in a BNC plug.

Power also supply a small hand-assembled circuit-board with three wires. This fixes a fault of the A1200 PCMCIA port, which does not implement the card reset signal. Once you've soldered the three wires to your A1200 Gayle chip, PCMCIA automatically resets when you switch on or reset the Amiga.

Otherwise, you need to slide the card out of its socket and plug it back in to reset that end of the network. This is a safe operation because PCMCIA cards have short power pins designed for 'hot plugging', but if you are not afraid of a bit of soldering, the reset adaptor board is more elegant. There's no need for this bodge on A600s as their implementation of the credit card slot resets correctly.

If you encounter a wide list of arcane complaint messages from TCP/IP, or sullen inaction – the network interface light unblinking – the card must be reset. Hardware interrupts monitor card changes



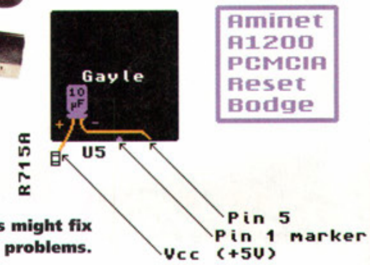
Eyetech offer the original CNet card for A600 and A1200 PCMCIA port.

Eyetech's authentic CNet card works impeccably but so does the clone from Power Computing and that includes a network package

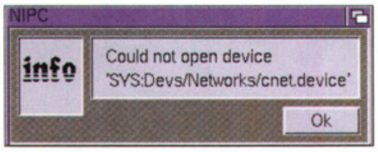
depends on the card and the Amiga expansion. In other words, it might not work at all.

A sliver of circuit board and three components permit a more certain cure, straddling the Gayle interface with three soldered wires. When comparing Eyetech, Power and DIY Ethernet prices, remember that Power make this adaptor for you, and Eyetech even fit it for you.

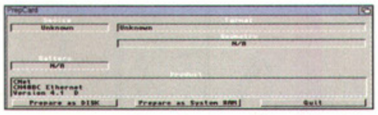
Eyetech's authentic CNet card works impeccably, but so does the clone model from Power Computing and that includes a complete, if basic, PC and multi-Amiga network package. Eyetech charge substantially more, but fix the A1200 PCMCIA reset as a matter of professional pride. You'd not get a Zorro Ethernet card for any less, but might get better software. With the right bundle either could yet be worth a *Format Gold.*



If you're lucky this might fix PCMCIA reset problems.



This means your CNet card is loose or didn't reset.



PrepCard confirms that the PCMCIA card is working.

SUPPLIER: Eyetech 01642 713 185.
PRICE: £79.95
REQUIREMENTS: A1200 or A600

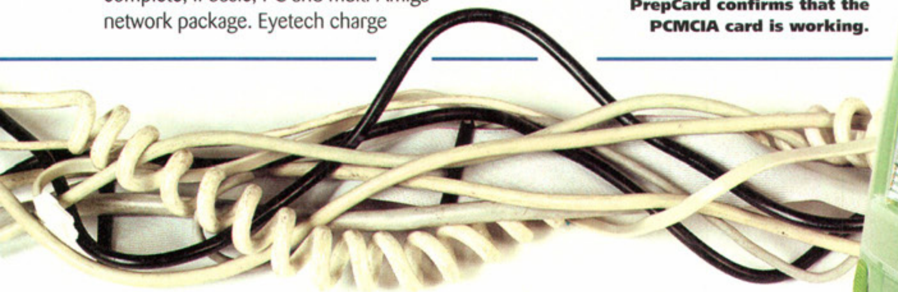
Pros and Cons

- \+ Genuine CNet hardware
- \+ Price includes A1200 reset fix
- − Only basic hardware drivers
- − No network setup instructions

OVERALL VERDICT: Suits Siamese systems and people who are confident in software hacking.

71%





and data transfers, so you can't confuse things by hot plugging.

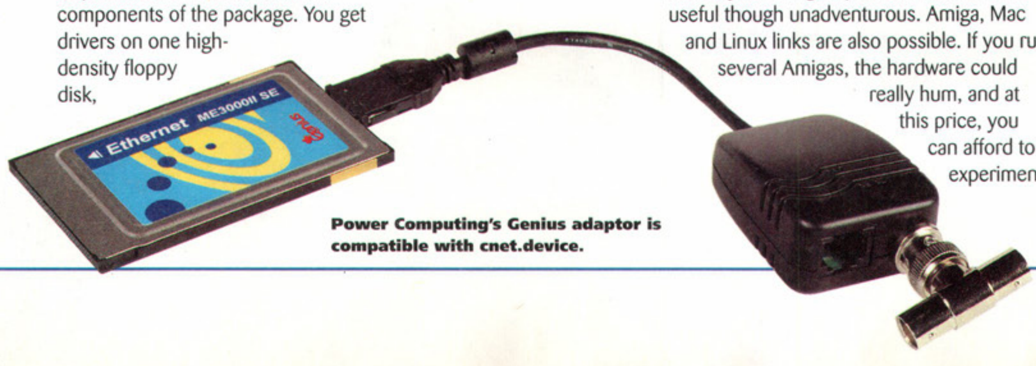
The Amiga is slowed, but still continuously usable, even during flat-out transfers. The top throughput is less than CPU-hogs like IDE manage, but other work can continue at the same time. The overhead is much more noticeable on a 14 MHz 68020 than an expanded A1200.

Power Computing's network expert has spent weeks extending and configuring cnet.device to support Samba, NetFS and raw TCP/IP

SOFTWARE

The printed documentation is brief and dispensable, all related to the PC components of the package. You get drivers on one high-density floppy disk, and a few desultory pages of American instructions, repeated in German, French, Spanish, Italian, Portuguese and Russian.

The vital extras are on the Amiga disks. Power Computing's network expert Alessio has spent weeks extending and configuring cnet.device to support *Samba* and *NetFS* as well as raw TCP/IP. Power's bargain bundle makes your Amiga a peer of PCs, which is useful though unadventurous. Amiga, Mac and Linux links are also possible. If you run several Amigas, the hardware could really hum, and at this price, you can afford to experiment.



Power Computing's Genius adaptor is compatible with cnet.device.

SUPPLIER: Power Computing 01234 851500.
PRICE: £49.95
REQUIREMENTS: A1200 or A600

Pros and Cons

- \+ Three disks of Amiga net software
- \+ Amiga Samba setup instructions
- \+ Includes solderable reset fix gadget
- − Slower than upmarket Zorro cards

OVERALL VERDICT: Works out of the box – but a lot better if carefully tuned!

81%

WELCOME TO THE FUTURE!



On the verge of a new millennium* you have to wonder what's going to happen in the computing world…

Illustrations: Stuart Harrison 0151 708 8483

While Richard and I were discussing the writing of this feature, it turned out that our discussion over what we thought of the near future of computing was going to make a far more interesting feature than what we'd originally intended – a possibly dry lecture on what new things would be coming for the Amiga soon. As such, we hope you'll forgive our indulgence and possible arrogance, but we thought that having more of an interview feel to the piece would work better. Time will tell.

There is, however, enough space to talk about what we talked about before you read what we talked about (if you see what I mean).

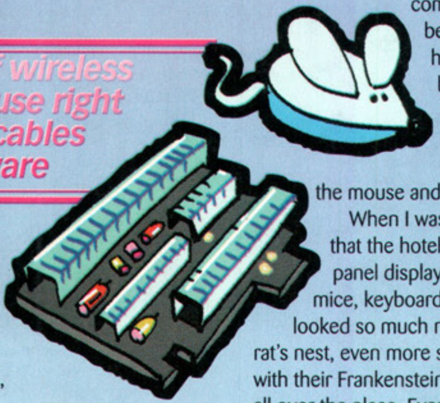
IT ALL STARTS HERE

With a new year, possibly a new century, maybe even a new millennium* just around the corner, we thought it was about time we gave you a glimpse of some of the stuff planned for the Amiga next year. While it was nearly all hardware-based, we thought it would be interesting enough in its own right. However, we started talking about some of the wilder and weirder ideas that are currently floating around, just waiting to be incorporated into mainstream computing, like SSD and Bluetooth (don't worry they'll be explained later).
Here we go:

DECENTRALISATION OF RESOURCES

BV: We started with mainframes which had dumb terminals, which got decentralised into several mini-computers which also had dumb terminals, then to the desktop computers in a network and now, with USB and Ethernet, that decentralisation is being taken further into peripherals which are self-aware and responsible for reporting back to the "main" computer.

I'd like some kind of wireless communication because right now I have about 18 cables connecting my hardware



RD: PostScript printers were the first examples of this, before USB and the like. But now even the lowliest printer has a processor of its own.

BV: Exactly. That Epson I have (Stylus 700), given the right software, can tell the computer how much ink it has left.

RD: Part of the problem has always been that because you were connecting via such a primitive interface it was impossible to get information back. Parallel ports were one-way devices.

BV: Except for the Amiga's. Another first for us!

RD: Now it doesn't matter so much if it's USB, FireWire or Ethernet, it's possible to get a status report back.

W(H)ITHER MICROSOFT?

Obviously what we present here is speculation on how we'd like to see the computing world, and more specifically, the Amiga world progress. There's no guarantee that what we want is going to be what happens. It may be that Bill Gates shrugs off the shackles of the US government trying to hold him back and just buys a small country, where all the subjects are Microsoft employees, Bill is king and their tourist industry sucks. He could then have his own final say about what does and what does not constitute a monopoly, and just get on with ruling the world.

However, the rising tide of people complaining about Microsoft would seem to preclude that from happening, and while I'm not going to say that Microsoft is dead in the way that some pundits seem prepared to do, I guess there's just the slightest possibility that we could find ourselves in the same boat another 10 years down the line.

In a heretical move in an Amiga magazine, I shall say that while Microsoft have been one of the worst things to happen to computing, they've also been one of the best. By more or less forcing people to adhere to the standards they've set, using APIs they've written. Although the PC world is still nearly as unstable as ever, things have gotten better. Software likes other software more and the only problem now is where one version of one piece of software requires a library (DLL) different from another version of another piece. In the Amiga world we can happily chuckle at how bad Windows and the products that rely upon it are, but the Amiga is going to have to get a damned sight more development soon if it is to compete.

WIRELESS COMMUNICATIONS

BV: Now, of course, we're moving towards an ever more wireless computing environment. There's infra-red in the form of IRDa, and radio communications, but I confess I don't know that much about either. Wouldn't there be interference if everything in a household is busy sending out radio signals?

RD: Not really. Bluetooth is supposed to behave something like Ethernet, where the individual appliances are always broadcasting, waiting for their part of the bandwidth.

BV: The reason that I, and I'm sure many other people, want some kind of wireless communication is because right now I have about 18 cables between my Amiga and the power, between it and the printer, the monitor, the mouse and so on.

When I was in Köln, I noticed that the hotel's computer had flat panel displays and used wireless mice, keyboards and printers. It looked so much neater than the usual rat's nest, even more so for Amiga owners with their Frankenstein A1200s sprawling all over the place. Even if wireless isn't achievable, simplification of connections is a must. USB is a great step forward in this, and being able to plug anything into any port without the fear of blowing up the item at one end of the cable or the other is a great boon.

RD: Absolutely. It becomes more of a networking rather than a strict peripheral issue.

MONITORS

RD: I think that flat panel displays are certainly the way things are going. CRTs draw too much current, weigh too much and take up too much space.

BV: Although they do have their advantages, like viewing angle…

RD: But then there's radiation, heat and reliability…

BV: Okay, okay…

RD: But then, Gas Plasma Displays and Liquid Crystal Displays have their own problems, of reliability, ease of manufacture and most importantly scalability. You aren't going to want to watch your DVD movies on a 14" flat panel display, and those big gas plasma jobs are really expensive. Of course with Candescent's Thin CRT you'll get a CRT-based monitor that's not much thicker than current flat panel displays.

BV: I haven't heard about Thin CRT.

RD: It works by not having one huge electron gun at the back of the CRT, but by having loads of little ones positioned close enough to the screen to enable them to shoot straight ahead for their area. No need for huge magnets, hence lower power consumption.

Another replacement for the venerable cathode ray tube is SSD. SSD stands for Solid State Display and it uses light emitting polymers to create a display with an RGB filter to create a colour screen. The viewing angle range is better than LCD, and the cost of production is much lower. But that's not all. There's also a system that people are calling "electronic paper" that uses tiny coloured balls suspended in oil that turn around depending on the current applied to them. The best thing about this is that the display doesn't need to be refreshed. It'll stay as it is until it needs changing, without any power. There are two versions at the moment which use slightly differing

Continued overleaf ➡

mechanisms. Xerox has one called Gyricon which has balls coloured half-black, half-white, which spin about giving a mono display. Their technology is so flexible and thin that you could literally roll it up, and because it doesn't have a refresh per se, it means that as wireless technologies improve, and costs come down, I'm sure we'll be seeing advertising billboards and the like using this, or a competing, but similar technology called E-Ink which is being developed in conjunction with networking giant Lucent. They go one step further in that their "balls" are transparent and filled with coloured chips which give a full colour display.

BV: Yes, actually, going back to light-emitting polymers, I was speaking to a guy at the BBC who reckons that "true" *Teletubby* t-shirts are going to be on sale within five years. Soon, we'll all be able to wander around with a slogan that changes as we like.

STORAGE

BV: All this will have huge implications for video, or more importantly user-created content, as opposed to everyone simply being consumers and getting everything from their televisions.

RD: It's already happening with the quality of camcorders increasing and connectivity between them and computers…

BV: Yes, and that will increase. Philips are about to launch their first DVD-RAM drive onto the market. It's not full-on yet – it can only offer 3GB on a disc I think, but you can bet their next models will offer greater capacity. Another interesting topic right now is C3D. They reckon that they are going to be able to fit terabytes (multiples of 1024 gigabytes!) of information on a single, multi-layered 120mm disc. That's the same size as a DVD or CD.

RD: I know, I know. How are they doing it?

Bluetooth and WAP are going to revolutionise home automation so controlling the cooker, TV and lights from one key pad won't be far away

BV: I don't know all the details, but it seems that they'll use fluorescent material in the pits of the discs rather than relying on reflected light, which also has a nice side effect in that the discs will be hazily

Changing Rooms?

While we're not sure about the floating, powered armchair, the chances are good that you'll be able to control much of your home with a control pad, much like the one our spaceman is wearing.

Given the fact that more and more companies are building in connectivity and intelligence into their products, we've no doubt that any new Amiga is going to have to deal with these things. Bluetooth and WAP are going to revolutionise home automation like nothing before. Want to program your video, turn the oven on and dim the lights? It's coming.



Sony's Aibo is an experiment into creating a robotic pet. It's a small dog and can beg, run around, play games with a ball, show happiness and shame if you tell it off. While it's not very effective right now (it's batteries only last about an hour), the amount of money being poured into robotic research is climbing every year. Within the next 10 years, many wise people anticipate a far more mainstream acceptance of robotic functionality. We don't anticipate C3-P0 any time soon, but low-level robots will become far more widespread and any new Amiga is going to have to be able to give them instruction, or even control how they work.

Many of the current innovations in speaker design can be summed up with three initials – N X T. You can already buy flat panel speakers designed using this system for your Amiga (see our Köln report on pages 14-19), but the real deal is going to come when they can provide a decent bass response. Because they work by vibrating a flat panel, most of the sounds tend to be in the upper ranges – not good for your dance choons, or that action movie soundtrack, but developers are trying to find ways around it as we speak – most of the solutions right now tend to involve big, boxy subwoofers.



transparent while probably keeping the iridescence that's sometimes the nicest thing about a CD. There's a bit about coherent and incoherent light on their website, but it all looked pretty incoherent to me. They say that they've got patents on the technology in over 40 countries, so I guess we'll have to wait and see.

RD: But the disc will be readable with a single laser?

BV: That's what it looks like.

PROCESSORS

BV: There's still the question of how everything is going to be driven. What sort of processors are we going to see? The world and his wife are saying that the Pentium and CISC generally are on their last legs and we're getting the final ergs available from those processors, but what next? PowerPC? VLIW?

RD: Well, no-one's actually made a general purpose VLIW processor yet, although apparently samples of Merced have been produced. Their explicitly parallel architecture is really clever, but I can't see Merced ever being practical. They'll probably get pipped to the post by that Elbrus thing, anyway. You know, that Russian chip that's also supposed to run Pentium code. But if half the rumours are true, Transmeta's processor is still the most interesting technology…

At this point both Richard and myself wandered off onto other topics which don't directly impinge upon the future of computing or, more importantly, the future of the Amiga. How much will this stuff have to do with our current Amigas? Perhaps not much, but a new model's bound to turn up sooner or later and you can bet that future Amiga owners will complain if they don't include a C3D drive as standard, or Bluetooth wireless networking. For now, we'll content ourselves with our machines as they stand and just look forward to what we can expect…

Ben Vost & Richard Drummond

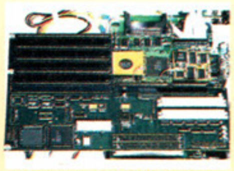
DVD is certainly all the rage right now, with a bigger take up than any consumer electronics item before it. However, until it becomes an easily-recordable medium it will never replace the humble 25 year old video recorder. Now with the advent of C3D discs, we wonder if that will ever happen, or will DVD be relegated to the same movie buff's ghetto that LaserDisc was? Hopefully not since DVD has numerous advantages over LaserDisc, not least the 800,000 units already installed in PCs around the world.

CONTACT POINT

Bluetooth http://www.bluetooth.org
Candescent http://www.candescent.com
SSD http://www.westaimadt.com
Gyricon http://www.parc.xerox.com/epaper
E-Ink http://www.eink.com/tech_index.html
C3D http://www.c-3d.net/product.htm



OS 3.5 - £34.95
see right for bundles


Zorro 4 - £119.95 alone
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Amiga Product Guide

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ADPT-EZSE-A	EZKey-SE Amiga 5p DIN k/b adapter for A1200/A600	18.95
ADPT-EZSE-A/K	EZKey-SE Amiga + A4000 kbd bundle	48.95
ADPT-EZSE-P	EZKey-SE PC 5p DIN k/b adapter for A1200/A600	24.95
ADPT-EZSE-P/K	EZKey-SE PC k/b adapter for A1200/A600 = Win95 KBD	24.95
ADPT-HD-2/3	2.5"/44way->3.5"/40w+4w adpt & 2.5->3.5 mtg bracket	11.95
ADPT-HD-3/5	3.5" Zip/SyQuest/FDD/HD brkt/pl ->5" bay	5.95
ADPT-KBD-5P6P	Amiga/PC k/b adapter 5p din-F ->6p m/d-M	5.95
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ADPT-TWR-AF5IN	Engraved 'AMIGA' faceplate for 5.25" tower bay	4.95

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ADPT-PCM-ETH-C	PCMCIA ethernet card inc. motherboard CC_RESET fix	74.95
ADPT-PCM-ETH-H	Hydra PCMCIA e/net card with Amiga drvrs inc. CC_RSTfix	129.95
ADPT-PCM-ETH-Z2H	Hydra Z2/Z3 Ethernet Card BNC (UTP + £20)	99.95
CAB-UPT-X60C	Crossed twisted pair/RJ45 for Sisys 60cm	6.95
CAB-ETH-3M	Ethernet Coax + 2 x terminator 3 metres	9.95
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ADPT-VGA-BUF	Amiga 23pD-F ->15pHD-F buffered adapter for A4000	16.95
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INT-AUD-PLZ2	Prelude Zorroll 16-bit full duplex sound card	189.95
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INT-SER-PPL	PortPlus Mk2-2x 460KB ser + 1x800KB par i/f	69.95
INT-Z2-PPL	PortPlus Mk2-2x 460KB ser + 1x800KB par i/f	69.95
INT-IOBL-Z2	IOBlix Z2 - 4x1.5Mbps ser + 1x EPP par port Zorroll	89.95
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INT-FDD-DF0	Interface for std Sony FDD for DF0 880KB	9.95

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CAB-SER-NUL2M	Null modem cable w/ D9F & D25F at each end 2m	9.95
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CAB-SCS-25D/50C	SCSI cable DB25-M to Cent50-M 1m	9.95
CAB-SCS-25D/25D	SCSI cable DB25M to DB25M mac type 1m	9.95
CAB-SCS-50C/50C	SCSI cable Centr50M to Centr50M 1m	9.95
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UK Bank/BS cheques, Visa*, Mastercard*, Switch, Delta, Connect, Solo, Electron. Postal/Money orders accepted. (* 3% clearance charge applies to all credit card orders). Due to space limitations some of the specs given are indicative only - please ring/write for further details. Please check prices, specification and availability before ordering. If ordering by post, please provide a daytime telephone number. Goods are not supplied on a trial basis. A1200 items are tested

Screen Play

Well, we've reached one of those milestones in gaming history, folks. The release of *wipEout 2097* opens a chapter of Amiga gaming history entitled 'Power PC only games'. Whether it will be a quick read or one of those chapters that goes on and on probably depends on how many people actually go out and buy *wipEout*, and whether it will convince more people to upgrade their machines.

If you've already got the necessary kit to run the game, you really are in for a treat as you can see if you turn the page. PPC and video card owners should be able to benefit from special versions of many games in the future. For everybody else, as the pages opposite demonstrate, there's still plenty of Amiga games being developed that you'll be able to play.

Two games that I expected to see in this issue failed to materialise due to last minute hitches but it seems extremely likely that we'll be able to bring you full reviews of *Whale's Voyage 2* and *Tales from Heaven* in the next issue. However, I know better than to promise anything when it comes to new releases so fingers crossed eh?

Paul Cavanagh

SCREENPLAY INDEX

Previews

Wasted Dreams not enough of a challenge for you? Want an RTS game to challenge Napalm? There could be some good news in store...

CODENAME Hellsquad





The two scenes above are from the early stages of the game. You'll be able to play them on the demo that will be on next month's CD.

Digital Dreams Entertainment are on a mission. They proved with *Wasted Dreams* that they could produce a game that uses classic gaming elements and still manage to provide something new. If that doesn't seem to make sense to you, play the demo on the CD and you'll see what I mean (if you get stuck you can always use the complete walkthrough in GameBusters). Now they're trying to do it again. *Hellsquad* follows in the footsteps of *Wasted Dreams* in that you'll have to pick up items and use them with the environment to progress, utilising an almost identical control system. The similarities are striking, but Digital Dreams have retained their ability to provide something surprisingly original.

The most obvious distinction is the perspective. Where *Wasted Dreams* was a top-down view, *Hellsquad* is side-on. Here you have beautifully drawn backdrops (largely static, but with some animation), with characters that get larger the closer they are to the 'camera'. *Hellsquad* is also novel in that one player gets to control four different soldiers. Not all at once though. You jump from soldier to soldier, and the players that you aren't currently controlling enter into a state of suspended animation. I assume that this will add depth to the gameplay, where a player will have to get the different members of the squad to cooperate. Expect to see a demo of *Hellsquad* on the *AFCD* next issue. In the meantime, feast your eyes on these lovely exclusive pictures from the game. You could also check out http://www.dd-ent.com for more details.







Although you can only see one soldier here, there are actually four in the game.









Exodus The Last War

On the CD -ScreenPlay-/Shareware

Napalm is currently the king of Amiga real-time strategy/combat games. This just might be a challenger. Look at the lovely graphics on the demo (whilst being patient if you don't speak Polish), behold the variety of landscapes depicted here on this page. Not convinced yet? Okay, how about 40 different missions in 20 varied landscapes? Land, air and sea units, anyone? What might just swing it for you is that you don't need a graphics card. The game should run on an AGA Amiga with at least 16MB fast RAM. To be fair, this was also the minimum required spec for *Napalm*, and you'll be able to get much more from *Exodus* with a faster processor, and 32MB RAM is recommended. With clickBOOM's *Euroburn* looming large on the horizon, *Exodus* will be facing stiff competition. Currently the game is 90 per cent complete with no publishing deal, although both Alive Mediasoft and Power Computing have expressed an interest. Hopefully the game should be available in January. The Polish developers, Team Axon, have more details. Their web address is http://free.polbox.pl/a/agnus97.



Fair enough, it doesn't make too much sense unless you happen to be a Polish speaker, but it looks good doesn't it?



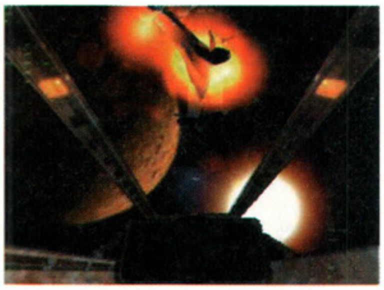




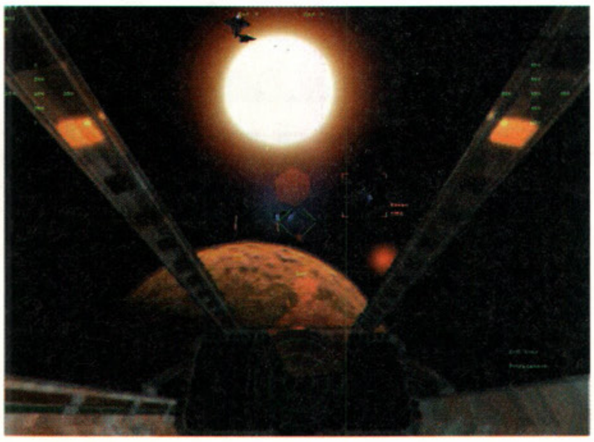


Lambda

We last featured this space combat game in Previews over a year ago in *AF118*. Sadly, even after all this time, there's still no release date. Mind you, judging by the screenshots, it'll be well worth the wait. In case you missed the previous report, you really ought to know that the minimum spec you'll be needing is an '040 with an FPU, 8MB fast RAM, CD-ROM and a hard disk. That really is the minimum spec mind, and the game will support graphics cards, 3D graphics cards and PPC processors. Research and development is currently underway to examine whether multiplayer networking support could be implemented. While you wait for the release, why not check out their website at http://www.illuvatar.demon.co.uk/lambda, it's well worth a visit. And don't be put off by the hold up of this game, it seems as though the developers are totally committed to making the game engine as efficient as possible which means a delay in production could be a good thing for us gamers in the long run.



Kaboom! With graphics like this Lambda should be well worth the wait.





FreeSpace



Oy you! Skinny robot bloke! Get orf moi laand!



Hyperion have just announced that they have acquired the licence to develop *Descent Freespace* for the Amiga. As reported in *AF130* Hyperion's conversion of *Heretic II* is looking fantastic, and they're also working on *Shogo*. Given that, the porting of this 3D space blaster is really something to look forward to.

Paul Cavanagh



wipEout 2097

Go hell for leather in this fast and furious, obliterating race of the future

My adrenaline levels are just beginning to settle back to normal. Just now I was about to cross the line in third place on a really tricky track. Then I crashed into a wall and blew up about a second before I would have completed the race and won a bronze medal. I let out the breath that I'd been holding for longer than is strictly healthy at the same time as an equally unhealthy expletive. A fine gaming moment, despite my angst at losing the race.



The road sweeps away into the distance, but cleverly turns a corner to prevent "pop-up" of scenery.

When wipEout arrived in the office there was lots of ooohing and aaahing – after all we've been anticipating this for quite a while

Make no mistake about it, *wipEout* is a game and half. Oh yes, and did I mention that I was playing it on an Amiga?

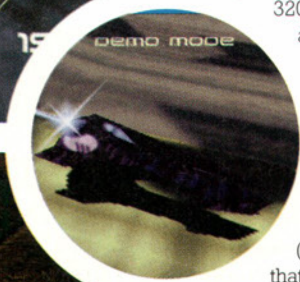
A MESSY START

When the disc arrived in the office, there was a good deal of ooohing and aaahing, and with good reason, after all we've been anticipating this game for a good while. At the WoA show back in July we saw a rolling demo of it, and we were impressed, and that was some months ago now. This is something of a landmark, being the first PPC-only game. Add to that the fact that it already has legendary status on the PlayStation, and that I was recently bemoaning the lack of decent 3D racing games on the Amiga and you can begin to see the reason for our enthusiasm. Imagine our disappointment then as we crowded around Rich's PPC-powered A4000 only to see the game run at something like two frames per second. Then we discovered that the game crashed every time a race attempt failed. On top of all that, there was serious glitching everywhere. We were not happy bunnies. Then Rich did his techy stuff, twiddled and tweaked and suddenly we had a game that was not only playable, but nigh on un-put-downable. Warp3D had to be re-installed, and some of the game parameters fiddled with but everything began to look much rosier.



But let's get this straight right away, the game still doesn't run perfectly. The machine that we're using is equipped with a CyberVision 3D, and we could really do with a better graphics card. Also, we're running *CyberGraphX 3* and the game would prefer version 4. The upshot of this is that the game will run pretty damn fast at a resolution of 320x240 (roughly the same as a PlayStation), but there is still some minor glitching. At higher resolutions the game will still run, and it looks fabulous, but there is considerable slow-down. It is possible to disable certain features (such as the sky, the trails that the ships leave behind, fogging etc) to speed things up. The sad fact remains that in order to get an exhilarating ride on our setup, we really have to limit the resolution. Bad news over. The glitching really doesn't matter when you're so damned involved in







The action's fast and furious and can be viewed in-cockpit (top) or outside your ship (bottom) for better long-range visibility.

CONTROLLING YOUR CRAFT

With controls for up, down, left, right, fire weapon, discard weapon and left and right airbrakes (essential for tight corners) a joypad is almost a necessity. The game supports CD[32] joypads and allows you to configure the button setup. Better still is a PlayStation controller, and that's what I've been using thanks to a nifty gadget called PSX Port. Expect to see a full review next issue.

STRANGE SYMBOLS

Driving over a tile marked with an X will give you one of the following:

AUTOPILOT
For a short while the craft will steer itself – very useful for those sharp corners.

TURBO BOOST
Gives a powerful thrust that will last for a few seconds unless you bump into anything. Best used on straight runs.

ELECTRO BOLT
Shoots in front of your craft. Any craft that you hit with this will stall and lose energy.

MISSILES
Like Rockets but only fires one at a time and will lock on to a target. You can shoot behind you if you press down at the same time as firing.

ROCKETS
Fires three rockets straight ahead of you, draining energy from anything they hit.

PLASMA BOLT
Will destroy a craft outright with a direct hit. They need to charge before firing and are very difficult to aim.

QUAKE DISRUPTOR
Creates an earthquake wave on the track in front of you, badly hurting any craft in its way.

MINES
Drops a series of mines behind your craft which are pretty painful and difficult to avoid.

SHIELD
Protects your craft from all damage. While activated you can pick up other weapons, but you can't fire them.

THUNDER BOMB
Inflicts a large energy drop on all visible craft. They also destroy mines which can be very handy.

E-PAK
This pickup will boost your shield energy. It's present in the PlayStation version but so far I haven't found it on the Amiga, but that doesn't mean it's not there.

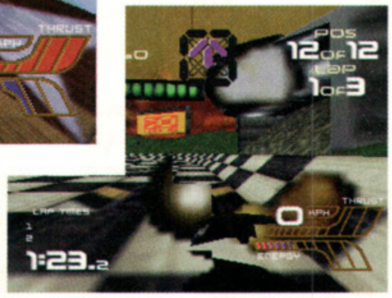
winning the race.

So what makes this such a fine game? Well, for those of you who haven't yet seen or played it on the PlayStation or PC, a brief explanation is required. The basic concept is the same as most arcade racing games - race against the



Woohoo! Autopilot and a shield! I am INVINCIBLE!!! (for all of three seconds...)





clock to reach checkpoints while at the same time competing against other drivers. It's a formula that's worked ever since *Pole Position*. While *wipEout* contains these classic elements, it also it adds a lot more.



PILOTING

The most obvious difference is that you don't drive a car, you control a sleek craft that hovers a few feet from the ground. They're nippy little critters, and with the aid of air brakes can handle some quite incredible cornering. They only have a limited amount of shield energy and the game ends if you run out of time, finish a race or run out of energy. Which brings us on to the next big difference from most racing games – the addition of weapons and powerups (see boxout). The idea is to win at the expense of the competition – even if it means wiping them out, hence the title.

With such a variety of weapons and pickups available a degree of strategy is involved in the gameplay. Should you, for example, save that autopilot for the really mean chicane coming up, or discard it in the hope that you'll get something that will inflict some damage on the enemy? A plasma bolt, if used well, can give a big advantage. But it's tricky to get right, and you could easily end up holding on to it for a whole lap waiting for the right moment, only to let it off to no effect. And in the meantime you've missed other pickups. Don't forget that the other competitors are out there trying to get you, and they can be pretty evil, let me tell you.

This game is exhilarating, challenging and quite dangerously addictive. The six courses are well designed, offering three levels of difficulty (although bonus courses are available). The graphics are superb, the excellent soundtrack and effects generate more atmosphere and a sense of pace. That's what makes this game great – pace. It's the sense of speed that gets that adrenaline pumping. The Amiga version also offers much higher resolutions than the PlayStation and is more adaptable. Normally I would never award an *AFGold* to any title that glitches the way this game has done but I am firmly convinced that this won't affect everybody and that it's our setup that is at fault. The fact remains that even with these problems, this is a game that deserves to be applauded. If you've got a PPC and a 3D card get this game, it's just what you've been waiting for.

Paul Cavanagh

SUPPLIER: Blittersoft
TEL: 01908 610170
PRICE: £29.99
REQUIREMENTS: PPC Processor, 3D Graphics Card, 24MB Fast RAM, CD-ROM, OS3.0, CyberGraphX or Picasso96

Pros and Cons

- + Blisteringly fast
- + Great sound and graphics
- + Incredibly addictive
- – Seriously system hungry

OVERALL VERDICT: If you've got the hardware you'd be totally daft to live without this game.

92%



Home in on the other racers, but you'll need to have good racing skills to get medals!



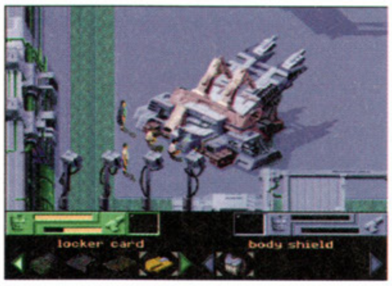
GAMEBUSTERS!

There's more conspiracy uncovered in the Wasted Dreams solution, some handy passwords and even a bit of a poser for you

Wasted Dreams PART 2 Complete Walkthrough

Last issue's guide concluded in the entrance to the military complex. There's plenty to be done here, so let's get straight on with it. Follow the path up into the leisure complex. Go left and give the guy sitting at the bar the book and you'll get a locker card. Go right and then up and use the card on the locker on the left to receive an officer's uniform. Leave the building and go down and right. This will take you into the training camp where you should collect an empty shell at the base of the big plasma gun.

Go right and enter the depot. Talk to the chap at the counter and eventually you'll get a gas mask. Pick up the bottle on top of the boxes on the right of the



Pick up the shells from the base of the chunky plasma gun.

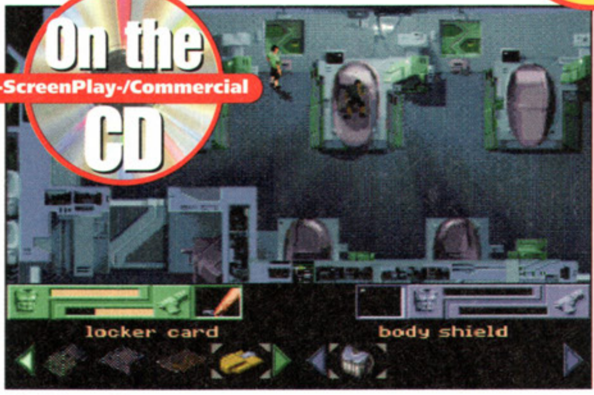
When you leave the building you will be arrested and locked in a room but this is where you use your acid to create an escape hole



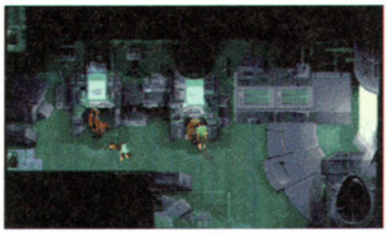
Join Captain Bootle for a wee dram. It's just a shame he doesn't vomit.

room and give it to the drunk. Return to where you first entered the complex. At this stage it might be a good idea to go back into the room where the recharge unit is. The guy at the desk has realised the deception and will attack you.

On the -ScreenPlay-/Commercial CD



I'll nick anything, me. I'm a geezer! Lockers and officers' uniforms just aren't safe.



This computer terminal is one of the few useful ones in the game.

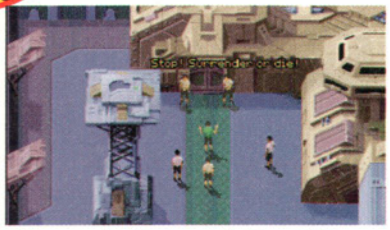
Dispatch him now and you'll be able to use the recharger unhindered when you need it. Go back into the complex and go left.

GETTING THE PILLS

Examine the ventilation shaft next to the doors and then look at the terminal that is attached to the wall, top right. This should open a door. Go left and start a fight – you'll have to get rid of everybody in this area. In the lower left section of this room you'll find a hatch where you can fill up your empty shell. Leave the room and use the full shell on the ventilation shaft. When it has taken effect, attack everybody in the area before they attack you. Now use the gas mask and enter the building. Use the teleport device, top right. Use the terminals and



If you haven't got a gas mask, you can't fill up your shell.



Things are looking very dodgy at this point. Escape is just around the corner.

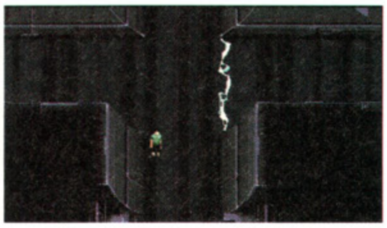
collect the pills and acid from the lockers. Return to the depot and give the pills to the drunk, and then show him your supply card. Follow him to his quarters and pick up the priority card that he drops. Give him the supply card and leave the building. You will be arrested and locked in a room. Locate a panel on the top right of the room and use the acid on it. Now jump down the hole. Things get pretty tough from here on, so save regularly.

BE A BRIGHT SPARK

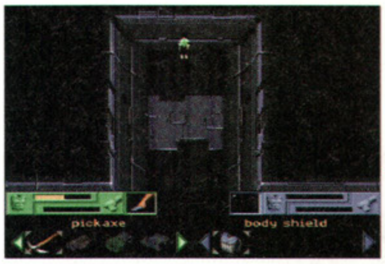
Go left and wait at the first crossroad for electricity to pass and then follow it upwards. Wait at the crossroads until the electricity passes right, you have to wait a while to avoid some electricity going down. When the electricity has passed from left to right, go left and then up



This panel can be quite tricky to locate. Use this picture to help.



I thought that electrician looked dodgy And he charged far too much!



If you don't get zapped, you'll eventually get to this wall...


...And you can finally use that great heavy pickaxe to get to this lovely cave.

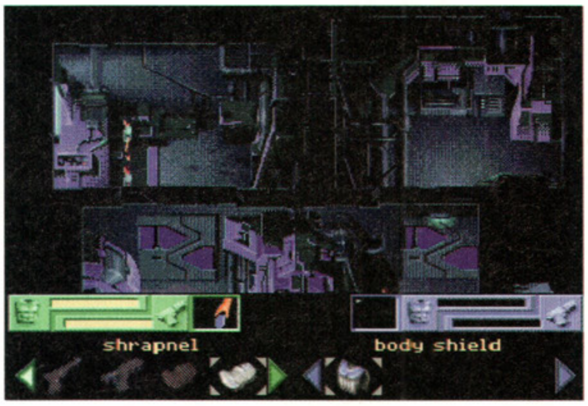
(after the electricity has passed up or down). Go left into a new zone. Go left and then down to a crossroad. Wait for electricity to pass left, and follow the electricity left. Keep going until you get to the second crossroad. Wait for the charge to pass up and follow it up. Take the first path on the right and continue along until you reach a new zone. Wait at the first crossroad for the charge to pass before going right. Now go up and keep going up until you get to a wall. Use the pickaxe and you'll emerge in a cave.

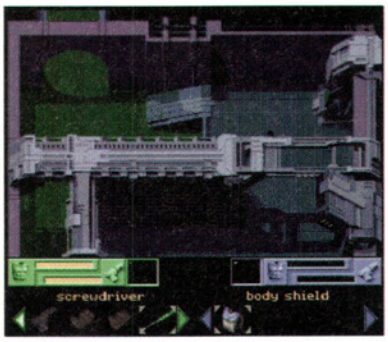
BACK TO THE START

Examine the canyon edges on both sides of the screen and then jump into the river. Return to the wrecked spaceship where you started the game and get a new gun from it before heading back to where the guy was mending his spaceship. Go down and use the bomb on the big door at the bottom. Pick up the shrapnel before heading into the building. Shoot the guy working on the terminal and pick up his gun. On the left you'll find a locker full of ammo. Use the terminal and then the teleport. Immediately fill the guy behind the console full of laser and wait for the other bloke to teleport back into the room to shoot him when he does. Go left and up and pick up the screwdriver. Now go to the room to the right of the teleport and use the screwdriver on the air conditioning duct, top left. Go through here and enter the sewers.

In our next issue, I'll give you the instructions on how to get through this section of the game, but until then, it may help you to know that if you press 'M', you'll bring up a map of the area.

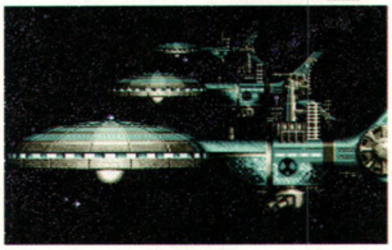
Paul Cavanagh





Yeah, I know, you're sick of mazes already. But at least you have maps to help you in the sewers.

Enemy



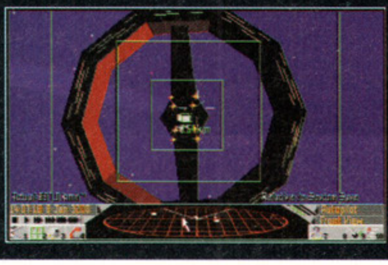
Erik Hesketh from Surrey has been good enough to send in these level codes for this strangely playable platformer. Thanks Erik, if you (or anybody else) get any further in the game, we'll print any more level codes that you send in.


It's that oh-so-convincing jumping style of Enemy again. Boing!

LEVEL	CODE	LEVEL	CODE
1	ENEMY	16	CHASE
2	FEAR	17	FLEET
3	FIGHT	18	HATE
4	SHOOT	19	MIGHT
5	WAR	20	WALL
6	DEATH	21	WOUND
7	DUEL	22	MERCY
8	BOMB	23	MORAL
9	HELL	24	TROOP
10	FRONT	25	FOE
11	FIRE	26	ALARM
12	ARMY	27	MAJOR
13	DOOM	28	CHAOS
14	BLOOD	29	GUNS
15	POWER		

Frontier - Elite 2

Mr R. Hurst from Nuneaton is encountering a bit of a problem with this classic space trading game. I'm not infallible, and have to admit I'm stumped, so it's over to you guys. Does anyone out there know where Mr Hurst can upgrade his hyperdrive? He's currently driving a Panther Clipper kitted out with a Class 8 hyperdrive. This is already one class above the standard upgrade level, but according to the manual, specialists can offer further upgrades. So if anyone knows of a decent cosmic tune-up shop he can pop along to, write in and let us know, would you? Ta muchly.


Docking – what a pain. Anyone got a good hyperdrive for sale?

SEND US YOUR TIPS & QUERIES!



Have you got hints, cheats, tips or general good advice for any Amiga games? We'd especially like some for the newer ones on the market. Or, if you've got a query about a game, give us a brief explanation of it, where you're stuck, then drop us a line and we might be able to answer it in Helping Hands. Please don't send us SAEs though as we'll just steal the stamps.

Name of Game(s): ....

Point where I'm stuck: ....

....

....

....

Send all tips and questions to:

HELPING HANDS • Amiga Format • 30 Monmouth Street • Bath • BA1 2BW



In an assortment of chocolates there's always a yucky one that no-one wants but with our PD and Aminet selection there's something for everyone

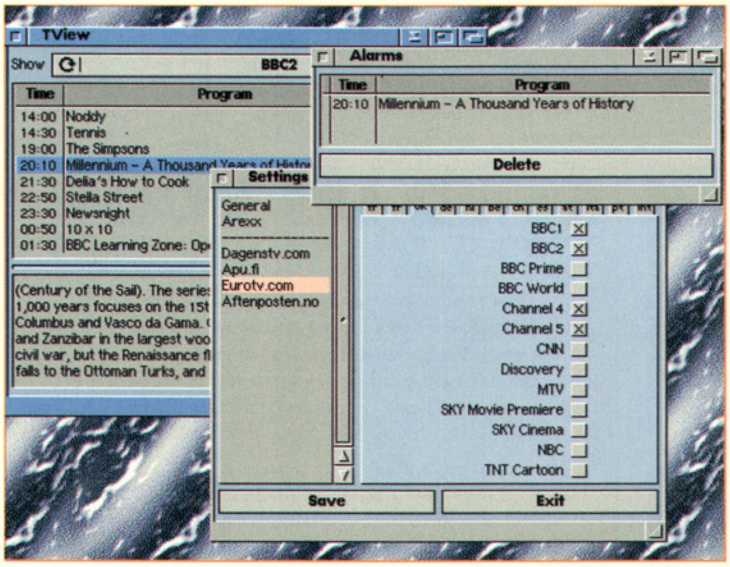
TView 1.1.8

You would think that finding out what's on TV from the Internet would be an easily accomplishable task, but it's not – at least, if you own an Amiga, that is. For example, our current range of browsers don't cope too well with the Radio Times website (http://www.radiotimes.beeb.com), and, anyway, this site is rather slow and cumbersome for quickly checking out what's on the box. *TView* is a rather more elegant solution.

TView is a neat little MUI-based application which knows how to query a selection of TV listings servers and download a day's worth of TV schedules for your chosen channels. It allows you to save this data, so you only need to connect once per day. The main window displays the listings, either by channel or an overview of all your selected channels at the current time. Click on a programme that looks interesting and it will even give a summary of what it's all about. Just in case you get so wrapped up in your computing that you forget there's a programme you wanted to watch, it has a built-in alarm function too. Select a program, choose alarm from the menu, and it will warn you five minutes in advance that your desired programme is due to start.

The one stumbling block with *TView* is that it doesn't support us Brits very well. This is a problem with the Internet sites it gets its information from, rather than the software itself. Only one of the servers that it knows, Eurotv.com, carries UK listings and these are only for satellite channels. It doesn't cater for regional variations throughout the UK and doesn't include the ITV channels at all. This last is no great loss; the only programmes worth watching are on BBC2 and Channel 4, both of which are fairly independent of geographical location. But, Eurotv.com lists times in Central European time, which, if you are not paying attention, means that you end up missing the show you intended to watch – even if you have the alarm turned on. *TView* should really take account of the difference with local time; this would not be a difficult feature to add.

TView is shareware. The demo version is restricted to showing only every other line in a schedule. It can be registered over the net for the miniature sum of £5, less than the cost of two month's worth of TV listings mags and requiring much less wastage of paper. If the author could support a site with better coverage of British programming, it would be a bargain.



TView is a good example of environmentally-friendly programming.

BY: Fredrik Söderberg
WARE: Shareware
FROM: http://hem.passagen.se/mcdrill/TView.html
SIZE: 63K
REQUIRES: MUI

Scalos-ECM v1.0



Execute with style with Scalos-ECM.

One of the advantages that *Scalos* affords over the vanilla AmigaOS desktop is its modularity: a function can be improved by simply dropping in a replacement. *Scalos-ECM* is just such a plug-in replacement and enhances the Execute Command function, the requester that pops up when you select that menu option or when you open a tool with a fake icon.

The first difference that you notice with *Scalos-ECM* is the eye candy: a silhouetted bloke holding a shell window with a flashing cursor decorates the left-hand side of the window. But there is some useful stuff in here, too. The string gadget is courtesy of the BetterString class, thus allowing greater editing control, and supports filename completion. A neat addition is that if you enter a URL instead of a command, *Scalos-ECM* will try and open that location in your browser via the OpenURL library. Not a feature I would find particularly useful, but clever nonetheless. Other extras include a gadget on the right, which opens a new shell window when clicked, and a command history. *Scalos-ECM* keeps track of the last 10 commands called and their associated stack settings, accessible from a pop-up gadget.

The history and filename completion features alone mean that this module is much more useful than the original. Two things need to be fixed, however: the default stack value is preset to 10,000, whereas it should clone the size from your Workbench; and it offers no way to configure the command that is called to open a shell window. Currently it's not much good to people who use a third-party shell or console device.

BY: Mike Carter
WARE: Freeware
FROM AMINET: util/wb/Scalos-ECM.lha
SIZE: 15K
REQUIRES: Scalos, MUI, TransferAnim.mcc, BetterString.mcc

MetaView 2.8

Bitmap images generally only look their best when displayed or printed at the size and resolution for which they were designed. Vector images, on the other hand, consist of instructions on how to build a picture – draw a line from point a to b with this thickness and that colour, fill at this point with that pattern, etc – and so can be arbitrarily scaled (within reason) without loss of quality. To display a vector image, it must at some point be converted to a bitmap, a process known as rasterization, but this can done at a size and resolution appropriate to the display device.

The Amiga is blessed when it comes to tools for manipulating bitmap images, but rather less so for vector images. Postscript-based formats can be rasterized with the powerful but complex *Ghostscript*, but that's about it. *MetaView*, however, is a viewing tool which can import and export vector images of various types.

MetaView's main window is a page where the loaded image is displayed. A strip of rather cryptic tool buttons are laid across the top. The page may be blown up with the magnify tool, but the control over zooming is rather primitive. It would be nice to be able to control the zoom level with more finesse and scroll the image around, but this is not supported. The crop function is not implemented yet, but it is possible to copy images to the system clipboard. However, this copies the entire window, not just the image, so is not particularly useful. Another problem with the GUI is that, although the screenmode is configurable, it opens on a NTSC-laced screen by default which is not very helpful for graphics card owners without a native display. The interface needs a lot of work before it can be a pleasant environment for viewing images.

Where *MetaView* comes into its own, though, is for converting images. It can be controlled via its ARexx port and a number of example scripts are provided to integrate with various DTP packages like *Wordworth*, *DrawStudio* and *Pagestream*. This means you may use its features to load any of the supported file formats into one of these packages. It's also particularly handy for batch processing, say, to convert the contents of a clipart disk in one go.

MetaView is shareware with a $25 registration fee. Only the ARexx save picture function is disabled in the demo version. Personally, I think the package has potential but needs a lot more polish before it's worth its price; if you have need of its fairly unique conversion ability then it may look a lot more valuable to you.

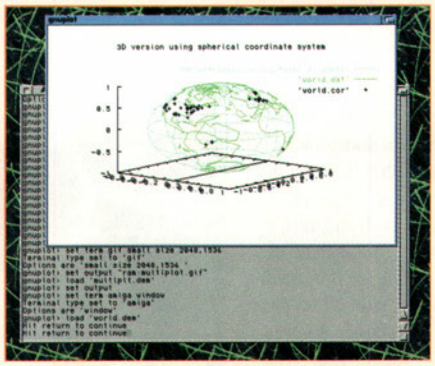


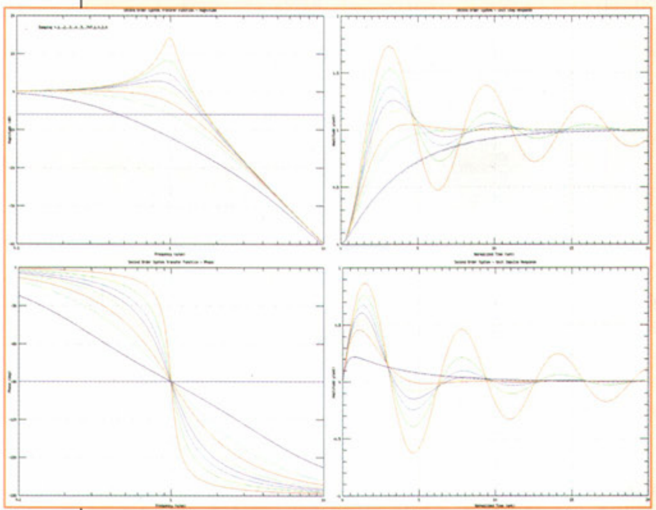
MetaView isn't omnipotent but it makes for a great converter.

GNUPlot

The GNU project is the source of a lot of serious, free software for the Amiga. One such application is *GNUPlot*, a command-driven, interactive function and data plotting program. What this means is that you input text commands into a shell window to control plotting to the screen. Batch files may be prepared externally and loaded and executed in one go.

This Amiga port of *GNUPlot* does not require the IXEmul system and ships with binaries built for plain 68K machines and 020/040 systems in FPU and non-FPU versions. The source code is available separately for you to roll your version if you feel the need.





GNUPlot lets you bewilder your friends with scientific-looking graphs and diagrams.

The device that *GNUPlot* renders to is determined by the user and is set via the terminal variable. When set to Amiga it provides the option of either displaying in a custom screen or on a window on your default public screen. There seems to be no way to configure the screen mode, though. Other terminal types include PostScript, PCL5, HPGL, GIF, PNG – for output to the respective file format – and various printer types.

***GNUPlot* has an extensive set of commands. Functions can be real or complex and made up from expressions containing all the usual algebraic and trigonometric functions; operators include all those from the C programming language with the addition of exponenation. Variable ranges for the plot can be specified and parametric functions are supported. Alternatively, plotting can be performed on discrete data listed in a data file. Smoothing and error bars can be applied. Various internal variables provide fine control over the parameters for the plot, the axes' ranges, labels, etc. Plots can be performed in 2D Cartesian or polar coordinates; 3D plotting defaults to Cartesian coordinates but you can define a metric to create spherical, cylindrical, etc, spaces.**

This is an immensely powerful package, but not very user-friendly. It does feature interactive on-line help, but expect to spend some time getting to grips with it. I have only begun to scratch the surface myself. *GNUPlot* will prove immensely useful to the Amiga user with a scientific or mathematical bent with the patience to learn its intricacies.

BY: Various
WARE: Freeware
FROM AMINET: gfx/misc/gnuplot-bin.lha
SIZE: 1.8M

SUPPORTED FORMATS

AI	Adobe Illustrator
AMF	AmigaMetaFile
CGM	ComputerGraphicMetafile
CLP	Windows Clipboard (import only)
CMX	(import only)
GEM	Graphical Environment Manager
EPS	Encapsulated PostScript (requires Ghostscript for import)
HPGL	Hewlett-Packard Graphics Language
DR2D	Drawing 2D
DXF	Drawing Exchange File (import only)
DSDR	DrawStudio drawing (import only)
WMF	Windows MetaFile

Continued overleaf ➡

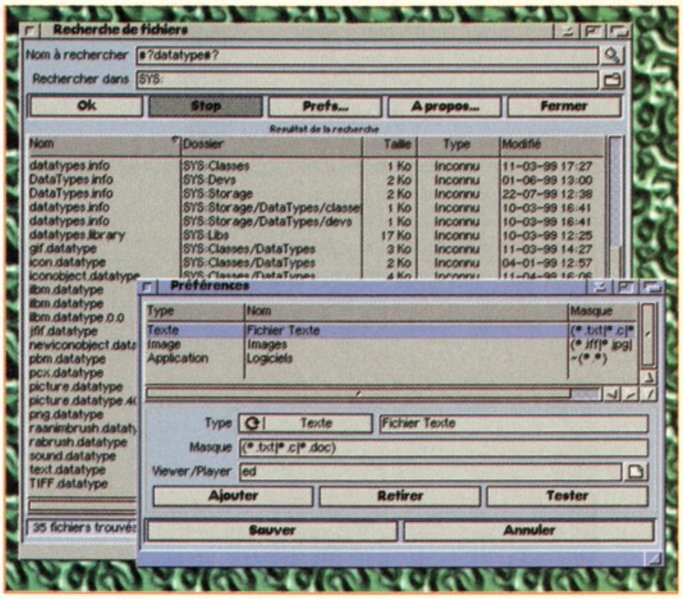
BY: Henk Jonas
WARE: Shareware
FROM AMINET: gfx/conv/MetaView.lha
SIZE: 485K

MUISearch

One thing that AmigaOS is lacking is a general file searching tool. You know the type of thing: you're sure that there's a file on your hard disk with such and such a name, but instead of looking for it by brute force, you call up your find tool and it does the job for you.

MUISearch, unsurprisingly, is just such a tool. It's dead simple. You type in the filename or pattern in the string gadget, select the drive or drawer to search in and off you go. *MUISearch* will list all matching objects in a table with their corresponding location, type and modification date. The list can be sorted according to any column. Double-clicking an entry will attempt to view that object. Viewers may be set up for different file types based on a MIME-like system for the recognition of filename extensions. This works fine, but it would save the user a lot of hassle if they could use or import settings from Vapor's MIMEPrefs utility, for instance.

This tool functions well, but could do with some attention to cosmetics. Currently, the GUI text is in French only, and the program doesn't even have an Icon. If you blindly launch it without paying attention to the stack settings, it will eventually run out and crash. Nevertheless, *MUISearch* is easy-to-use, quick and a handy tool to have around.



Seek and ye shall find? Bah! I'm far too lazy for that. Get the computer to do the work instead.

BY: Emmanuel Dausse
WARE: Shareware
FROM AMINET: util/wb/MUISearch.lha
SIZE: 17K
REQUIRES: MUI

XADMaster v3.1

File archives are incredibly useful for packaging up and transporting collections of files, but the sheer number of competing archiving formats in common use can be a bit bewildering. *XADMaster* is a modular shared library system which tries to brings some conformity to this field. It does for disk and file archiving what the XPK system does for file packing: it provides the programmer with a single API to control an extensible set of archiving methods. *XADMaster* only supports unpacking of archives, however, not creation.

Like XPK, a single main library provides overall control and a series of separate plug-in libraries implement each individual archiving method. Supported formats include LhA, LZX, ZIP, TAR, DMS – to mention but a few – and it can even handle self-extracting Windows ZIPs and multidisk archives. A number of shell-only tools which use the library are supplied with the package, but none are particularly inspiring. The most useful out of all of them is *XADUnFile*, a generic unpacker for file-archives. You no longer have to learn the commands and switches for all the different archivers available, *XADUnFile* does the trick.

XADMaster is a powerful concept, but at the moment lacks real software to take advantage of its features. A GUI-based unarchiver would be an ideal first project, for instance. The library is shareware and has a novel payment scheme. You can either send $20, three bug reports or write some new client software which uses the library.

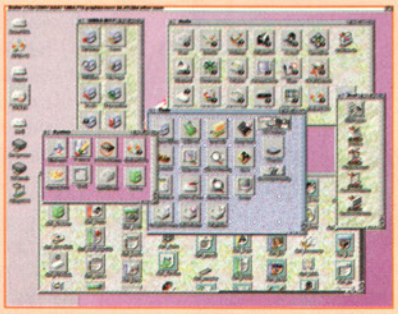
Richard Drummond

BY: Dirk Stoecker
WARE: Shareware
FROM AMINET: util/arc/xadmaster.lha
SIZE: 251K

OS3.5 ROUND UP

A steady stream of tools to add new features to and to tweak the settings of OS3.5 has been flowing into the Aminet. The man behind most of them is Stephan Rupprecht. RAWBInfo, his replacement icon information requester for Workbench (util/sys/RAWBInfo.lha) is now at version 1.5, while WBCtrl (util/sys/WBCtrl.lha) has reached version 1.3. This latter turns on some hidden features of the OS3.5 desktop, such as the removal of the gauges from disk windows, notification of changes to a drawer's contents so that Workbench can automatically update its window and the storage of icon image data in Fast RAM. This latest update now supports FBlit so that users without a graphics card can use Fast RAM for icons.

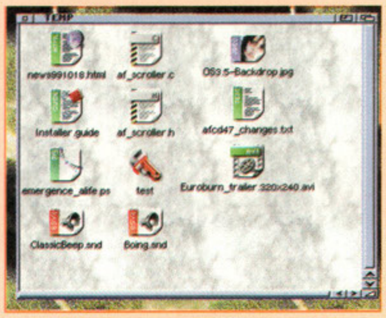
Although OS3.5 can display NewIcons icon images, some people may miss some of the other features that the NewIcons package offered, such as DefIcons. This patch gave files with no icons an icon image corresponding to their filetype, but the patch no longer works with OS3.5. In fact, it's no longer needed because the new Workbench has such a feature built-in. All that's required is a function to do the identification and provide the appropriate image. Two such examples are available: DefIcons44 (util/wb/DefIcons44.lha) and TweakWB (util/wb/TweakWB11.lha). The former functions very much like the original DefIcons patch and performs its own file identification. TweakWB does its identification using the datatypes system. It also combines the functionality of WBCtrl.



Colourful OS3.5 icons under Scalos. Pity you can't get rid of the icon borders, though.

Another feature you may miss from NewIcons is the ability to have icon labels rendered with an outline or shadow. This was a handy feature since it made text more readable on a variety of backgrounds. A new patch has been uploaded which claims to be able to do this for the OS3.5 desktop, OutlineFont (util/wb/outlinefont12.lha). This patches the `Text()` function of graphics.library so that all calls from the Workbench task result in text being drawn with an outline or shadow. Unfortunately, it doesn't work. I suppose the WB3.5 must use a different call for drawing icon labels. It does, however, work on the size, date and type attributes when a window is viewed by name; just not on the filenames themselves. Oh, well. I'll put it on my OS3.6 wishlist...

Lastly, users of the *Scalos* desktop replacement might be feeling left out. Those high-and-mighty *DOpus* owners got an upgrade which allows them to see the new OS3.5 icon imagery. Well, now there's one for Scalosians, too, available from http://www.aliendesign.net/. It's much simpler, just consisting of a new datatype. Just copy amigaiconobject.datatype into your SYS:Classes/datatypes drawer and hey, presto! Alas, this quick update doesn't work too well in practice. OS3.5 icons get displayed fine, but always with a border. The border settings in the Workbench prefs get completely ignored as well as the border flag within the icons themselves. Also, the background inside the border is whatever background colour was used when the icon was originally drawn, not the colour of your screen. More work is needed here, methinks.



File type-casting with DefIcons44.

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Serious

GoldED 6

Is the latest incarnation of this text processor worthy of a whole new version number?

First things first. Although we've given Power's new incarnation of the Flyer two pages, just like the original A1200 version, it's not really ready for a full review yet. However, given the fact that people are working on it round the clock, it probably will be by the time you read this, so you can expect a final score and review in the next issue.

Other than that, what's been happening? Well, OS3.5 is still selling well by all accounts, and there's hope that Haage & Partner will continue their licence to develop the operating system so we can have a 3.6, 3.7 and so on. Met@box showed their AmiJoe card at the Köln show, so it can't be long before we get our first non-68k-powered Amiga to test, and the first PowerPC-only software has been reviewed in *Amiga Format.*

While things continue to be quiet in Gateway/Amiga land, the amount of development for the Amiga continues to amaze me, and you can be sure it will continue as we progress into the new millennium*.

Ben Vost

SERIOUS INDEX

A good text editor is perhaps the most important multipurpose tool for the average computer user. Any time that speed and comfort of text entry is more important than formatting control, whether for writing source code or because the text will be imported into some other application, a text editor comes into its own.

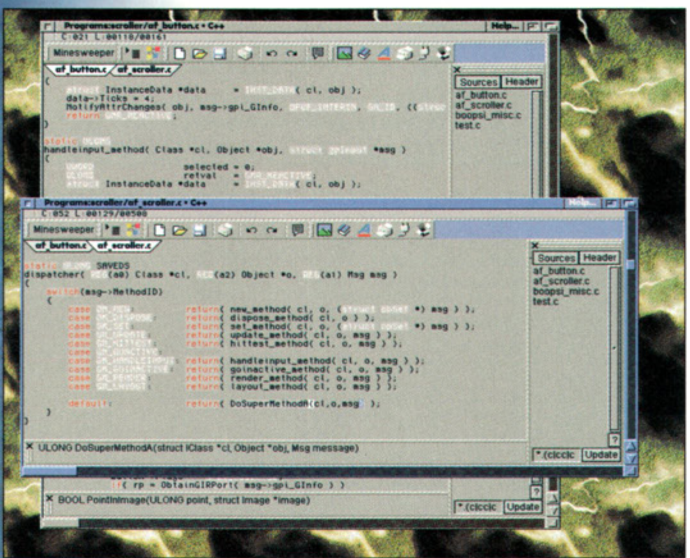
> **The most prominent feature of GoldED is its configurability. You can customise every facet and twiddle all the features to your heart's content**

ALL THAT GLITTERS

GoldED is the only commercial text editor for the Amiga that is still being vigorously developed. Ben reviewed the previous release in *AF118* and came to the conclusion that it was an immensely powerful and fast but overly complex package with a non-intuitive interface. Have things improved with *GoldED 6*?

Unfortunately, the changes made in this version haven't made the program any easier to use. The interface has had a visual tweak, but is still non-standard and not straightforward to use. You still have the buttons with cryptic images and no text (although the Windows-style help gadgets are useful here) and the masses of listviews and configuration windows. Editing of string options is still performed by what Ben infamously called the 'linger-click' method: you click an item and let the mouse rest over it for a string gadget to pop up. No visual clue is given as to which items this operation can be applied to.

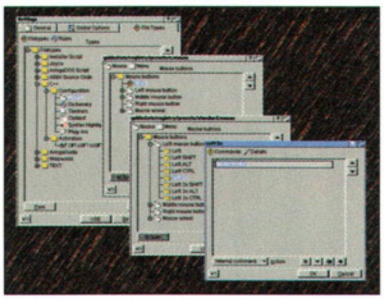
Okay, so the interface defects are all here, so what about the good stuff? The most obvious change is that the main editor windows have been improved with a plug-in capability. Modules can commandeer areas of an editor window for their own use, areas which can be dragged and re-sized with the mouse. This is put to good use for the new project explorer (see box) and quick info plug-ins. If you decide you need all the window real estate for your text, you may close the plug-in windows. Unfortunately, you cannot close them individually. That area on every window is closed.



GoldED's support for the C programmer is second-to-none.

MAKING IT YOUR OWN

The most prominent feature of *GoldED* is its configurability. You may customise every facet of the program to your own taste: its keymapping, its response to mouse-clicks, its menus, toolbars, context-sensitive pop-up menus, and so on. Then there's more complex features like syntax highlighting, automatic indentation, dictionaries, references, all of which can be twiddled with to your heart's content. If it's

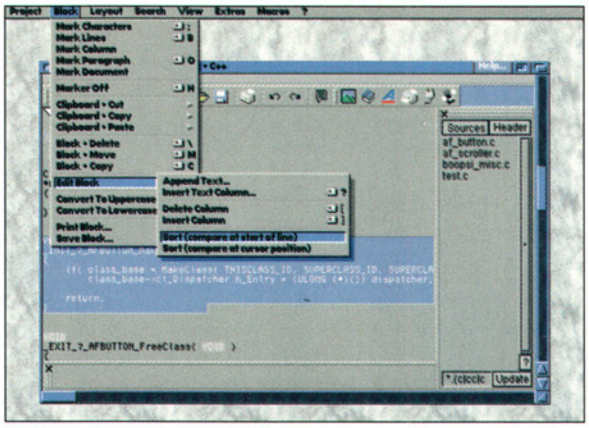


Changing settings means plowing through endless numbers of windows.

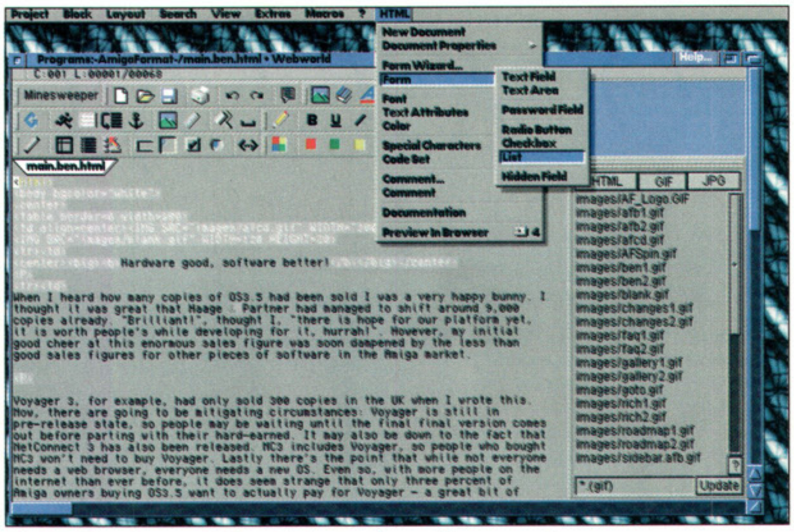
EXTRAS

Some bonus tools are thrown in for good measure with the *GoldED* package. The first of these is *HighSpeed*, a tool for printing text files to PCL-speaking printers, such as Hewlett-Packard's DeskJet and LaserJet ranges. It has loads of features such as printing multiple pages to a single sheet, double-sided printing, book modes, the ability to print AmigaGuide files and so on. It's just the thing for making a hard copy of source code and does a much better job than printing via the system printer drivers.

Another handy tool is *Recover*. This scours the memory for any *GoldED* files still resident and saves them out to floppy. The idea is that if you crash your machine before saving changes to a file, you can reboot and then fish them out of your computer's memory. It doesn't always work: it depends on how drastic the crash was and whether the memory where the files were stored has been overwritten, but it's saved my bacon on numerous occasions.



If you can't do it with GoldED, it ain't worth doing.



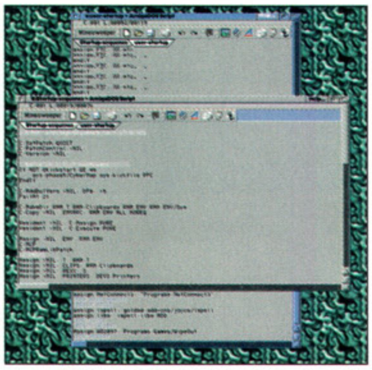
The HTML environment allows fast, error-free web page creation.

not here, you don't need it. This level of configurability means that you can make *GoldED* behave like any other editor you choose. In practice, though, it's easier to adjust yourself to *GoldED* rather than vice-versa.

A powerful feature is that you may create separate environments with settings configured for editing specific types of files. The CD comes with a host of environments pre-configured for you to use. Each filetype is specified with a pattern, usually matching a file's suffix. So, if you are editing a file called 'source.c', the C environment will be used, or for 'index.html' the web environment. Each environment may have its own settings for syntax highlighting, keyboard mappings, mouse controls, or whatever and different environments may be used concurrently in different windows.

Configuring these environments to your own taste is a real chore. This is down to *GoldED*'s alien interface and its bizarre take on object orientation. The settings are grouped together in modules and each stored in their own file. So, keyboard mappings are stored in files with a suffix '.keyboard', mouse settings in '.mouse' and so on. The documentation talks of a filetype tree, but a list would be a more accurate term. Each filetype in the list has a set of configuration files.

The standard filetype is TEXT, a catch-all for when no other type matches, and contains all the standard settings. Other filetypes can choose to either use TEXT's settings or redefine their own settings. So, for example, for the C environment, you would use the same configuration as TEXT for most things, but use different syntax highlighting, toolbar settings, etc. appropriate to C. Organising the filetypes as a list doesn't make the relationships obvious, though. A tree, with TEXT at the root and other filetypes as branches from TEXT would be a lot clearer. Each filetype could choose to inherit a settings file from its parent or define its own. At the moment, it's not always obvious where the settings come from.



GoldED's annoying window-update bugs in operation.

EXPLORATION

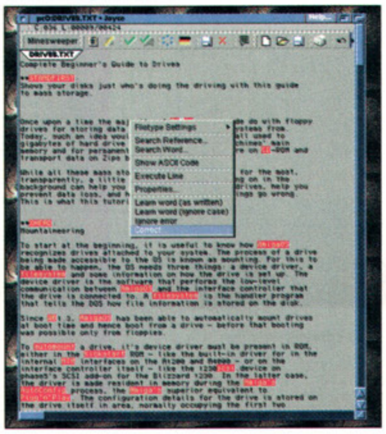
The project explorer is a new addition to *GoldED6* and makes use of the window plug-in system. It comes in two versions, one as part of the C/C++ environment and one for the HTML environment. What it does is to display all the files related to the current one in lists inside a plug-in window. So, with the C environment, one list displays all the source files and the other lists all the header files. Clicking any of these will load that file into a new window. The HTML explorer lists HTML files and images. Again, clicking an HTML will load that file, whereas clicking an image will insert an image tag with the image's name at the current cursor position. The project explorer is a really useful feature and allows you to navigate between the different components of your projects with ease.

DECISION TIME

You might at this point come to the conclusion that I dislike *GoldED*. This isn't true. My relationship with it is more complex than that. I love the fact that it is incredibly quick, especially for refreshing and scrolling text, even in AGA screenmodes; I hate the quirky refresh bugs that mean if you scroll a window that is partially covered by another one its contents get trashed. I love the fact that you can tailor environments for working on different file types; I hate the default set ups and the fact that changing the settings is such a convoluted process.

When all's said and done, however, there's no other text editor that approaches *GoldED* in terms of power and flexibility. The add-on environments mean it's equally at home and equally efficient at knocking together source code, HTML or AmigaGuide documents. The plain text mode with its thesaurus and spell-checker mean it's great for just bashing out words. Whether you like the package or not is an entirely different matter. If you haven't already tried it out, I suggest you give the demo on *AFCD44* a test drive before committing your cash.

This new release still has all the pros and cons of *GoldED5*. I would rather the author had spent more time making the interface less of a burden to use or the documentation less impenetrable rather than just adding more features. The project explorer's a nice touch, though.



The JOYCE add-on has a useful, but not too intelligent, spellchecker.

Richard Drummond

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Pros and Cons

- \+ The most powerful editor this side of emacs
- \+ Filetypes allows optimisation for specific tasks
- \+ New project explorer makes navigation simple
- − Interface is far too complex

OVERALL VERDICT: Once you get used to its foibles, the ultimate text cruncher for the Amiga.

85%

Power Flyer 4000

Can this long-awaited Power Zorro III card trump the A1200 Flyer, and outrun big box SCSI?

The Power Flyer 4000 is a Zorro III interface for fully 32-bit desktop and tower Amigas. It provides two 40-pin IDE 'Integrated Drive Electronics' interfaces, nominally to FastATA standards. These ports have on-board termination and support up to two drives each, configured as Master and Slave.

A boot ROM sets up the interface during Amiga auto-configuration. The board employs no less than five Mach210 programmed gate arrays, like those on Buddha Flash, CatWeasel, Prelude MPEG and Picasso 2+ though those get by with only one or two each.



Power's Flyer 4000 has plenty of plug-in ROM and logic space, and room for improvement.

HARDWARE

IDE transfer rates depend on the 'mode' in which transfers operate. All drives support mode 0, specified for IBM's vintage PC-AT, but newer drives can go much faster if all devices on the cable support later modes. IDE is synchronous, so two drives on a given cable work at the rate of the slowest.

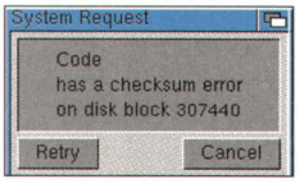
> *If you're lumbering along with Commodore's IDE, the Power Flyer could usefully boost your system, especially if you own a modern drive*

The Flyer's twin ports mean you could put fast drives on one and slower ones on another, although Power warn that old drives may struggle with the modern specification. Unlike the A1200 version, you can still use the motherboard port as well as the new Flyer ones, so that may be the best place to leave an old drive or two.

PIO MODES

The Power Flyer 4000 Gold supports PIO (Programmed Input/Output) modes 3, 4 and the nascent mode 5, as well as the bare-bones standard of Commodore's motherboard (which is PIO 0). The table lists the absolute maximum speed in each mode, and real results for gigabyte drives.

For comparison, the motherboard port sustained sequential 512K reads from the Seagate at 1568 K/second, with 43 per cent CPU left to the Amiga; the Quantum test strangled the CPU, like the Flyer, but managed 2,775K/second. CyberSCSI strolled through a Barracuda drive at 3,324K per second, a mere third of nominal, but meanwhile the 68060 ran at 99 per cent of full speed. Details vary, but the generalities are clear.



Fast Flyer transfers were prone to checksum errors.

PIO mode 0 runs drives at slow speed, while later models support much faster transfers, assuming the data is available from the disk or drive buffers – the quoted speed is an upper limit, invariably higher than the sustained rate that data can be read from the disk. Drives fall back to the highest mode supported by everything on a given cable.



Don't let the installer delete your SCSI CD ROM mountlists.

FLYER 3000?

I tested the new Flyer with two modern IDE drives – a gigabyte Seagate 'Fast ATA-2' drive and a 6GB Quantum Fireball. It is only designed to work on an A4000, but I also tried it on a stock A3000 with 25MHz 68030 and Kickstart 2.04. It seems it should work on any A3000 or 3000T, but the old Buster CPU might limit speed and you'll need modern formatting software – ideally the Kickstart 3.1 upgrade – to get the most out of big drives. It's no rival for Buddha on A2000s, as the Flyer requires 32-bit Zorro III transfers.

THE BUNDLE

The new Flyer comes with a 24-page A5 manual, helpfully written though sadly devoid of any illustrations. You get a floppy with *FastATA4000* software, Allegro*CDFS* and a basic speed tester.

The ROM code splits big drives into simulated drives within the 4GB limit of Commodore's *Fast File System*, with partitions up to 2GB each. You can turn this off for use with Workbench 3.5, direct SCSI, NSD or TD64 extensions. A new Quantum drive with a nominal capacity of 6.4GB was split into three partitions of about 1.3GB, dividing the 4GB space on the first virtual drive, and three CD-sized partitions on the other.

The FastATA.driver command turns on the higher PIO transfer modes, normally at the start of startup-sequence. In addition, AmigaOS 3.5 mandates this line:

```
SetPatch QUIET SKIPROMUPDATES
scsi.device
```

INSTALLATION

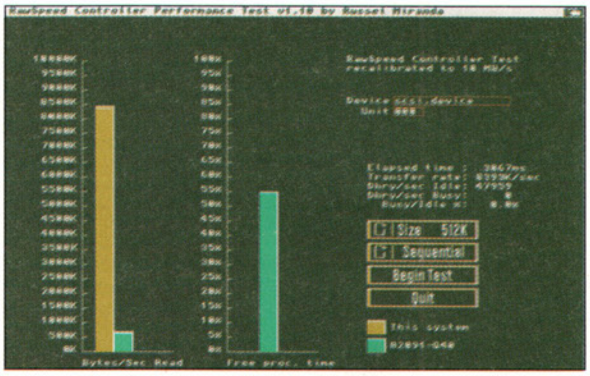
Hardware installation is painless – just plug in the card and connect your drives. The card is small, and the same width as the 100-way Zorro slot, so easy to align. It needs plenty of space above it, either in the top slot, or with the IDE cables snaking round a similarly small board like a Zorro Hypercomm or Buddha Flash. IDE cables are not provided, but generic PC ones should work fine.

The Flyer replaces scsi.device and comes with Allegro *CDFS*, capable of decoding DVD blocks and finding proper file names on otherwise tilde-strewn CDs in the latest non-standard from Redmond, the bowdlerised CP/M Joliet format. You can install up to three CD drives, or even more

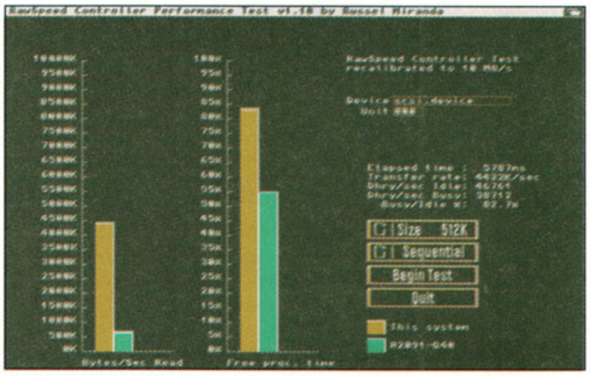
EIDE PERIPHERAL INPUT/OUTPUT (PIO) MODE LIMITS

PIO MODE	NS PER WORD	TOP RATE	QUANTUM 6 GB	SEAGATE 1 GB
0	600 ns	3333	1582	1167
1	390 ns	5250	N/A	N/A
2	240 ns	8333	N/A	N/A
3	180 ns	11111	5044	2592
4	120 ns	16666	7420	4357
5	100 ns	20000	8393	4376

RawSpeed transfer rates in KB/s measured on an A4000 with Cyberstorm 2.



In PIO mode 5 Quantum IDE powers past my SCSI 2 FAST drives...



...but Commodore's A4091 manages almost transparent Zorro III DMA.

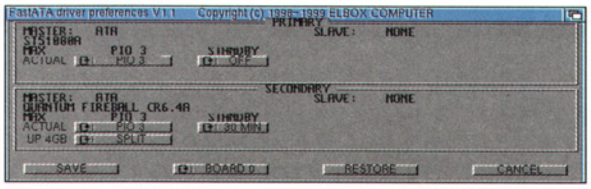
if you have multiple Flyers, though they compete for time so they don't work simultaneously.

It's a good idea to remove *IDEFix* and other SCSI-patching tools from your startup-sequence before the Flyer adds its own. The FastATA.driver file added to your C directory normally runs early in startup, turning on the fast drive features.

Unlike the A1200 version, the A4000 Flyer does not replace motherboard IDE, so you need a 'fake drive' or resident patch to disable the half-minute Kickstart 3.1 wait if you have no drives there. If you still use the inbuilt scsi.device, whether Commodore's fake IDE one or the A3000 and A4000T true SCSI, the Flyer will be bumped up to 2nd.scsi.device, just as with multiple SCSI boards. You may need to tweak DOSdriver options to account for this renumbering.

HDToolbox optimistically scans up to 9th.scsi.device, so there's no need to adjust the icon for that AmigaOS utility, as you must with CyberSCSI and most rival devices. Nothing bar minimalist multiplexed Zorro III transfers stops you running a bunch of Flyers in several slots on one Amiga. In fact Zorro limits the fastest drives and buffer transfers, unless the Flyer is expanded to use multiple transfer cycles on systems that can handle them, with Buster 11.

GUI Preferences require that you boot with the left mouse button down to defer loading of the FastATA.driver, or reset to make changes effective. Preferences can limit the PIO modes and split large drives.



The v1.1 prefs are not font-adaptive even in Workbench 3.5.

'Standby' spins unused drives down after one, five, 10 or 30 minutes. Spinning down makes sense on a machine left on overnight, but during the day it could be counterproductive, imposing more stress on the bearing than continuous running. A very long lunch might just about merit spinning up and down, but these presets seem too short.

COMPARISONS

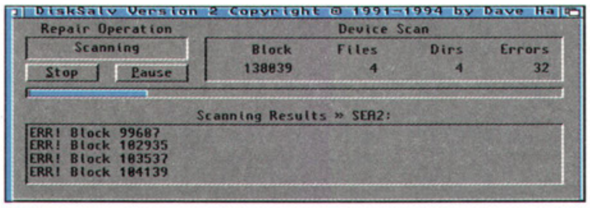
Power Computing are taking no chances, appending 'Gold' to their product name. Nick Veitch gave the A1200 version an unprecedented 98 per cent, and the new one has advantages: it's easier to fit, thanks to generic 32-bit Zorro III slots, and comes with the nippy Allegro *CDFS* which was unavailable when Nick tested its predecessor.

However the Flyer 4000 is not yet at Gold standard; A4000 systems and expansion attain higher specifications than A1200s, and the new Flyer falls short of other Zorro III controllers. It does not share the system as smoothly as processor-local controllers or Zorro III SCSI DMA cards. Disappointingly, Flyers monopolise the computer while using a drive, paralysing *ParNet*, emulators, rendering and similar CPU-intensive activities.

Yet ATAPI CD and DVD drives are widely retailed, sometimes faster and generally cheaper than SCSI, so the Flyer could be a bargain if you need loads of disk space. It can read big files fast, but is not particularly suitable for CPU-intensive animation, *Samplitude* mixing or compressed data streams, unless decoding can be offloaded to a coprocessor. Copies between Flyer and SCSI drives mesh well, barely competing for CPU time, so you might add a Flyer and some cheap, huge drives for online backups, and keep your DMA drives for your real-time recording and editing.



Our 6GB drive pushes the old HDToolbox into antispace.



DiskSalv struggles to repair Flyer write errors.

The Flyer uses 32-bit transfers but none of the fancy extras that distinguish late A3000s and late A4000s with variously-busted Busters. If you've got a Fastlane, A4091, Warp Engine, 32-bit GVP or CyberSCSI DMA board you may find the Power Flyer economical but coarse. If you're lumbering along with Commodore's IDE the Power Flyer could usefully boost your system, especially if you already own a gigabyte drive capable of modern timing.

HARD ERRORS

So Flyers are cheap, like IDE drives, and potentially cheerful, but are they reliable? Speed-reading tests worked consistently, but I got a host of checksum errors when writing files, and previously-good partitions sprouted errors which confounded *DiskSalv* until I reverted to motherboard IDE. Drive names got corrupted, tool files disappeared, and checksum errors abounded. Throttling back to PIO mode 3 minimised these faults, but I still had to click Retry as transfers went awry periodically.

Power tried top-speed ultraDMA66 cable and fiddling with the MaxTransfer settings – precautions that should not be necessary – but still could not get the hardware to work reliably.

The faults persisted after a driver update. Apparently Nick Veitch's A1200 Flyer review was based on the third version of that product we received. The first one worked no faster than the motherboard IDE port. The third was fast, although a CPU-hog, and the middle version showed problems like those the Power Flyer 4000 currently exhibits.

POTENTIAL

The Power Flyer 4000 has been advertised since June, yet it seems it has been released prematurely. The Mach chips, and perhaps the Boot ROM, may need to be upgraded, as for the A1200 version, before the Flyer delivers its promise. Those chips are socketed, so upgrades are possible without returning the entire unit.

These fixes might yet improve the Zorro III implementation, with support for DMA and multiple transfer cycles, making the new Flyer twice as fast and much less CPU-intensive. The Power Flyer 4000 is a good idea that needs more work. We intend to update this review when the bugs are sorted out.

Simon Goodwin AF

SUPPLIER: Power Computing
TEL. 01234 851500
PRICE: £74.95

Pros and Cons

- \+ Fast transfers on big cheap drives
- \+ Quick, easy Zorro III slot installation
- \+ Capable, compatible software bundle
- − Zorro III subset hampers multi-tasking

OVERALL VERDICT:
You just haven't earned it yet, baby.

Since the Power Flyer is obviously not quite ready for a final review, we've decided not to give it a final score. To do it justice, we'll give it a score when we do our review in the next issue.

Ami-Atlas

Is this route planner going to take you the distance or fall short on the way?

How often do you find yourself looking at a road atlas, trying to work out the best way to get somewhere? Do you religiously work out which way will be cheaper, shorter or faster? Have you ever wished that you could do all this automatically, with the aid of your trusty Amiga? If so, *Ami-Atlas 5* could be for you.

> **It can find the cheapest, fastest or shortest route for your travels but before it does you may have to add your town and road to the map**

Ami-Atlas comes on two CDs and a floppy disk. The floppy contains updated GIF and JPEG datatypes, while the CDs hold the supplied maps – one for Germany and another for the United Kingdom. My first gripe is that whilst there is an installation script on the 'Germany' CD in English, Epic have put a label on it stating "Do not install from this CD" – instead, you have to use the drag and drop method of putting the drawer where you want it. The problem with this is *Ami-Atlas* needs an assign, which you've got to add to your user-startup yourself, or run the supplied script every time you want to run the program.

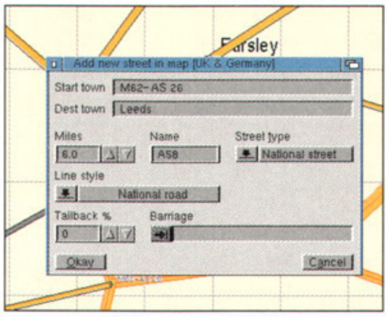
IT'S A LONG WAY...

One of the main things you'll be using *Ami-Atlas* for is route finding. This is very simple to do – you just enter your starting point, destination, and any places you might like to visit on the way. There are four choices of route type, allowing you to prioritise speed over distance or cost, and there's even the ability to let *Ami-Atlas* choose a "pleasant" route. You can also ask for all types to be calculated, so that you can compare them and pick what you think is the best. Ferry information to Ireland is also included, allowing you plan that trip to Dublin, but it would have been nice if this had been extended to include connections to mainland Europe too. Once you've decided on where you want to go and what sort of route to take, it only takes *Ami-Atlas* a few seconds to work out the best way, even when you've put in complex detours.

When it's done, you're given a breakdown of the route it has found which also includes distances, petrol consumption and driving time, presuming you've set the preferences accurately. This is something you will need to change – unless you really do drive at 100mph on the motorway! You have the ability to save or print this route for future posterity (and to prevent arguments in the car), and you can have the route displayed on the map. If you choose to have more than one route type you can have them all displayed at once for comparison and if things look a little too complex, you can improve visibility by removing towns and roads from the display.

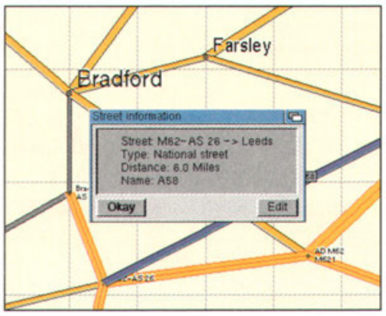
SETTING OFF

When you first run *Ami-Atlas,* it opens a rather nice-looking window on your Workbench screen. In fact the only problem with the user interface is the fact that the scroll-bars aren't standard and thus don't have arrow buttons to aid navigation. This is a minor oversight, but still an oversight. The toolbar allows easy access to most of the functions available, and if your screen resolution is too narrow for it all to fit on, a couple of scroll buttons appear to let you get at the others. However, an option to edit the toolbar would have been even better so that it could be arranged in order to suit different resolutions.

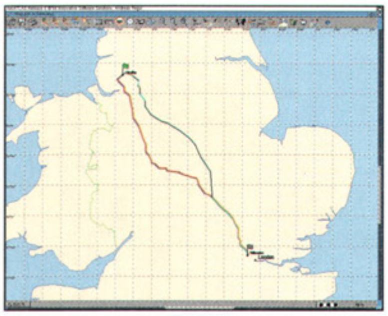


You may have to add your own street to the map.

Even so, configurability must have been a key word when *Ami-Atlas* was being designed as you can change pretty much everything about the way the map is drawn. For example, if you think that the world would be better with green sea, you can change it, along with the colour of the roads and the colour of the box in which its name appears. You can even choose which font is used to display town names, or whether measurements are shown in miles or kilometres.



Here's one I added earlier, as shown by the street information requester.



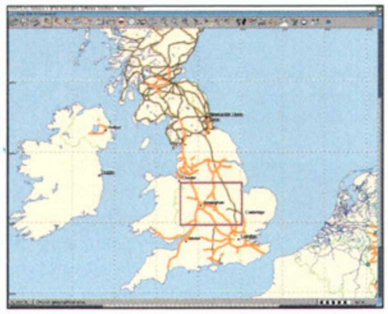
This map shows alternate routes, with all other detail switched off to aid clarity.

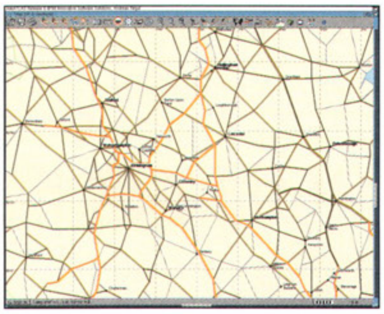
LOST ALREADY?

Probably the first thing you will do is to look for where you live, which is where a lot of people will be disappointed. Although there is a wealth of information on the German map, including many small towns and local roads, the UK map has a lot of towns and major roads missing. Some place names are still in German or incorrectly translated. This can make searches difficult, especially when it's something minor such as Stoke-on-Trent being listed as Trent (Stoke-on). The map isn't quite as up to date as you might think either – the M1 extension from Leeds to the A64 hasn't been included even though it has been open for many months now.

But all is not lost! It is very easy for you to add your own roads, towns and even motorway exits. Creating a new road is just a matter of clicking on the start and end points and entering the name and length of that section of road, although it would be nice if the software could calculate the road length automatically for you. You can also insert towns into roads, automatically linking them to the outside world and details can be edited so you can easily correct place names or spelling.

There are two ways of finding a place. If you already know where it is in the country,

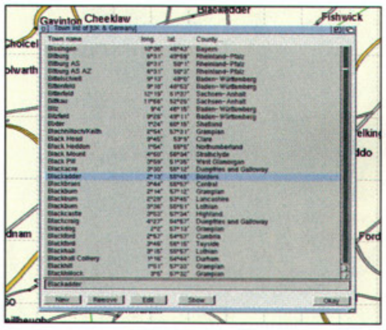




By simply dragging a box around an area you can zoom the map in to show more detail.

THE EXTRAS

***Ami-Atlas* is not just about route finding. It also comes with lots of details about hotels, caravan sites and theme parks, as well as other miscellaneous information on the countries supplied such as car registration information. On the German map, you get a little bed icon for a hotel, and clicking on it brings up more detailed information. It's the same with theme parks and places of interest. You're even told what rides are available or what credit cards are accepted! Unfortunately, the UK side of things isn't as well catered for. None of this information is actually included on the map, but is in HTML files on the CD. And it's nowhere near as comprehensive – many of the theme parks are just listed with an address and contact number, although for some there are links to slightly more detailed web pages. The hotel information is more detailed, with some 2,000 places to stay listed and web pages for each, but there's no search facility and you have to scroll down the page until you find one in the place you're visiting. It would have been nicer if all this had been available directly through *Ami-Atlas*. Still, if you've nothing to do of a Saturday night, you can add them to the map yourself!**



(Left) You can look up towns with amusing names on the alphabetical list provided.



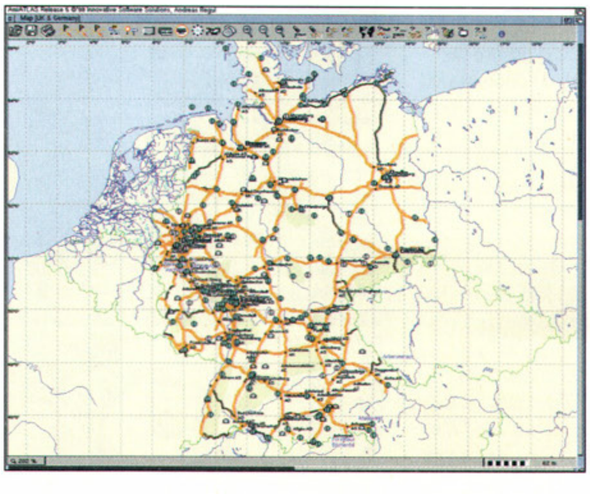
There is a comprehensive list of parcs in Germany but the UK section lacks information.

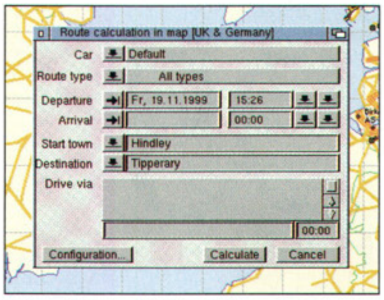
you can just use the mouse to drag a box around that area to automatically zoom in. This is really useful and can be used to good effect if you know roughly where in the country somewhere is. The alternative is to open the alphabetically sorted list of towns. Not only does it show you which county a town is in, but also its longitude and latitude – useful information for potential star gazers!

BACK TO MY ROUTES

Finding a route is an easy task – see boxout 1 – and you can take into account detours. You can't actually specify places to avoid but you can avoid places notorious for traffic. This can be done in part by setting a section of road to have a high probability of tailbacks, and then telling *Ami-Atlas* to

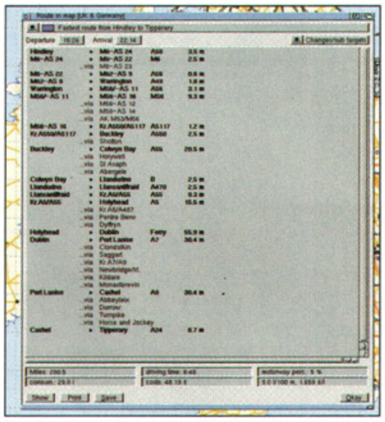
An overview of Germany.





(Above) Enter details of the route to be found then (right) a route breakdown is displayed in text and (below) you get the full picture by viewing the map.





avoid them but I would have preferred to just tell it to avoid Coventry in the same way you can ask to go via Leeds. If you use the map to select places to go to or via, then you get a little flag to show where these are on the map. However, if you click on the "Set the start town" button you can't scroll the map around, so you have to be viewing the location first. It's the same with the other windows that pop up, such as town information or printer options. With a bit of foresight, these windows could have been handled asynchronously, allowing you to tweak the map before committing it to paper, but it's a minor annoyance.

The "route calculation" window does make things easier though with a couple of handy features. First of all, any previously used names are available in little pop up gadgets, allowing you to quickly select a regularly used town. Also, if you enter the start of the town name and press return, a list of matching names pops up, allowing you to quickly select one from the list. It's little things like this that show a lot of thought has gone into the program.

So are the routes chosen any good? After adding a couple of places and roads to take into account where I live and work, I asked for the fastest route to be calculated. It gave me the route I expected it to, which is not the best due to the traffic on those roads. It was only when I cheated and put in a town to go via that it gave me a route



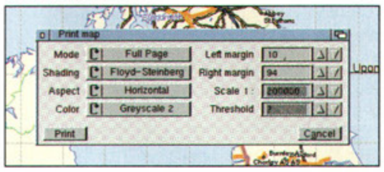
This close-up of Köln demonstrates the wealth of information available.

similar to the one I regularly use, although it suggested I leave the motorway a junction earlier – something I'll have to try on Monday. (It worked!)

JOURNEY'S END

Overall, the software is great. It looks good, and handles well. However, it's really only of use if you are living in or going to Germany. Unfortunately, the UK side of things looks to have been rushed through. Not only is the map very sparse in comparison, the fact that the extra information is in separate files is also annoying. The lack of an installation script and lack of translation for the help guides (they're available on the 'Germany' CD if you speak fluent German) are things that should have been completed before the CD was pressed, and not offered as additional files that need downloading from the net. If you do buy *Ami-Atlas* for the UK map, expect to spend a lot of time adding towns and roads.

Kevin Fairhurst AF



Print off maps for referral later on.

SUPPLIER: Epic Marketing
PRICE: £5
REQUIREMENTS: CD-ROM drive, hard drive

Pros and Cons

- **+ Clear intuitive interface**
- **+ Highly detailed German map**
- **– Very sparse UK map**
- **– No documentation**

OVERALL VERDICT: A must-have if you're German, otherwise spend the £5 on a road map.

58%

91% for the German side of things.

Philips 109B

It's width that matters... when you want to view the perfect picture that is

For more and more Amiga owners, the days of being happy working on a 14" portable, or joy of joys, a 1084S or CM8833MkII are long gone. People demand a higher resolution, they want crystal sharp pictures and they need monitors that can handle graphics cards. With the new output from Philips you can see why they are only too happy to ditch their old VDUs.



Although the 109B is a 19" monitor it is a great deal smaller and lighter than others on the market.

The snappily-named Philips 109B is a 19" monitor, although you'd be forgiven for thinking it a 17"er or even a large 15" job. The reason is that it's actually smaller (in length and weight) than the Microvitec GPM 1701 that usually sits on my desk. As you might expect, its picture is also a damned sight sharper and it is capable of resolutions and frequencies far past most Amiga graphics cards (though it isn't downwardly mobile enough to cope with PAL or NTSC resolutions, preferring to halt at a VGA standard of about 30kHz). For those without, a scan doubler or preferably flicker fixer is a must, and it does work well enough with video-style resolutions. It doesn't suffer the problem of many Amiga monitors of not being able to handle the extremely late delivery of the signal, giving a picture that's unable to be expanded to fill the screen and hovers on one side or the other of the monitor. In every resolution attempted the monitor was able to fill the screen beautifully, and the very comprehensive range of controls means that adjusting the display is easy to do.

> *In every resolution attempted the monitor was able to fill the screen beautifully and adjusting the display was easy with the range of controls*

There are two sore points, but both are minor and related to using the on-screen controls. The first is that the base for the monitor is very small, which means that the monitor rocks to and fro as you press the buttons on the front to adjust the picture. The second problem is that the control panel isn't very intuitively laid out. For the PC this monitor comes with a setup disc which allows you to adjust the picture the monitor is displaying through Windows with your mouse, which is quite impressive, but unavailable to Amiga owners right now. However, I'm sure that Philips would be happy to supply the know-how for an enterprising Amiga owner to port the software, though it might have to wait until we have a working USB implementation.

Physically the monitor looks quite nice, but nothing really special, and the back of the monitor is, as ever, not very attractive, although some effort has been made to stop it looking like the back end of a factory. But it's the short-neck CRT technology and the sheer (lack of) space this monitor takes that really impress.

Although everyone knows that flat-panel displays are as light as anything, they are still very expensive and not too flexible when it comes to the wide range of screen resolutions that Amiga owners are used to playing with. So for us at least, CRTs are still the way to go and for me, I'd be very happy not to have to go back to my Microvitec monitor.

Ben Vost

VITAL STATISTICS

You can always make a monitor review absolutely rivetting by splurging out on the factoids included in the documentation, so here you go, a special treat:

HORIZONTAL RESOLUTION: 30-96kHz
VERTICAL RESOLUTION: 50-160Hz
DOT PITCH: 0.25mm
MAX. RESOLUTION: 1920 x 1440
DIMENSIONS INCLUDING BASE: 17.3" wide x 17.6" high x 15.6" deep
REGULATORY APPROVALS: TCO '99, MPR-II, T¸V/GS, T¸V-Ergo & more)
More details can be found at: http://www.pcstuff.philips.com

SUPPLIER: Philips (but widely available) 01756 702892
PRICE: £492 RRP £405 Street Price

Pros and Cons

- \+ Excellent picture
- \+ Small space requirement
- \+ Reasonable price for 19"
- \- Wobbly base

OVERALL VERDICT:
A very good monitor and proof that there's life in the CRT yet.

86%

Developer CD V2.1

Programming requires not just good problem-solving skills, but also the right resources…oh, and plenty of coffee

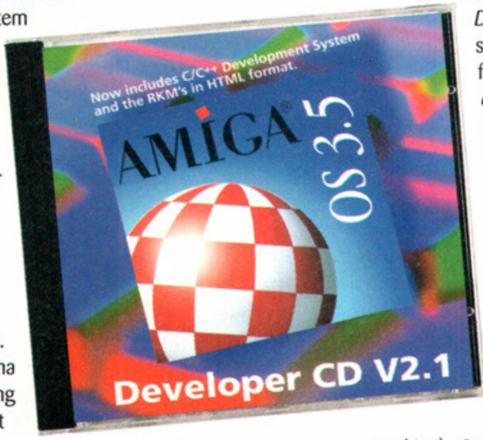
The long-awaited update to the Amiga's operating system, OS3.5, is here at last. Programmers wishing to take advantage of the new features afforded by this release in their software need information: a new OS needs a new Native Developer Kit or NDK. This and much more is provided on the Amiga Developer CD v2.1.

AMIGA FORMAT GOLD

KNOW THE FACTS

The NDK is comprised of autodocs, includes, link libraries, tools and example code. The autodocs – so-called because they are automatically generated from the source code of the operating system – provide human-readable information to the developer on how to use all the functions offered by the OS. The link libraries and includes provide machine-readable information for the compiler. Both have been updated to cater for the new release.

A problem with previous NDK's was that they were very *SAS*-centric, if such a word exists. In particular, things like the pragma files, which permit the inline calling of OS library functions, would not work with other systems. In NDK3.5, however, they've been modified to work with *DICE*, *Maxon C* and *StormC* as well. *VBCC* and *GCC* achieve inlining through a different mechanism of macros and inline assembly code, so users of either system will have to roll their own.



It's a got-to-get jam-packed CD for all Amiga programmers.

> *The most interesting and useful addition to the NDK is ReActor, a visual GUI-builder for Reaction, OS3.5's extension to BOOPSI*

Despite this greater broad-mindedness, I have encountered some problems with the new includes and *StormC*. As an example, the include file gadgets/layout.h tries to redefine a couple of preprocessor constants, which *Storm* doesn't allow. This is easily fixed, however.

As well as the usual amiga.lib, a new linker library has been added to the NDK, reaction.lib. This contains miscellaneous support functions for the new Reaction GUI system and also performs auto-opening of Reaction class libraries for both *SAS* and *DICE*. Strangely, this is stored in HUNK_LIB format which neither *dlink*, *DICE*'s linker, nor *GCC's hunk2aout*, can understand. It works with *VBCC* and *Storm*, however, albeit without auto-open.

EVERY ACTION…

Tool updates in the NDK include the new Installer (which supports back-tracking), *CatComp* (for localising your software) and *BumpRev* (which is now year 2000 compliant). The most interesting and useful addition, however, is *ReActor*, a visual GUI-builder for Reaction, OS3.5's extension to the standard BOOPSI system.

ReActor allows you to create windows and populate them with any of the standard Reaction gadgets simply by choosing the desired components and settings from various lists with the mouse. *ReActor* itself is not very pretty and you still need to know about BOOPSI, but it can really speed up the GUI development and testing process.

It saves out complete GUIs as resource files and as object code. This object code can then be statically linked with your program and the GUI initialised with a simple call to the new resource.library. Opening any of the windows you designed is another simple call to this library. Resource tracking and localisation is performed automatically.

Designing GUIs and writing the code to implement them has traditionally been a time-consuming and messy job on the Amiga. *ReActor* streamlines the process. It's not a visual development environment like MS's *Visual* range, but it's a load quicker and less error-prone than doing everything by hand.

STORM FORCE

The Contributions section of the CD contains developer material from various third-parties. The big new addition here is *StormC v3.0*. This is a non-commercial version only, which means you cannot sell any programs you compile with it, and it doesn't include PowerPC support, but this offers incredible value for money. A special price on upgrades to v4.0 is included with the CD.

StormC is the closest thing that the Amiga has to a standard C compiler since *SAS* for the Amiga is no longer in development. One could argue that there are technically better C compilers available for the Amiga, but a point in *Storm*'s favour is its powerful graphical IDE (integrated developer environment), making it a lot less intimidating for the novice than traditional shell-only compilers. Installation is also a lot easier with the script provided; you get all the OS3.5 includes and libs as standard, meaning you are ready to develop for the new OS with the minimum of fuss.

Storm is a strict ANSI compiler, but does support some Amiga-specific features. You may still find that older source code will need some tweaking to get it to compile. Luckily, loads of example code has been provided as *Storm* projects for you to experiment with, including all the examples from the *ROM Manuals*.

Richard Drummond

OTHER STUFF

The Developer CD still has all the useful stuff that the last version had. The bible of Amiga programming, the *ROM Kernel Manuals*, are included in AmigaGuide format as are the autodocs and includes. All are now presented in HTML as well, although a more printer-friendly format would have been nice too. The Amiga Mail and DevCon disk are still here and, although old, contain many a nugget of information that you won't find elsewhere. The contributions section contains the usual third-party developer kits, including *Envoy*, *SANA-II* and *INet* packages; WarpUp is here, but PowerUp ain't. New entries include the SDKs for *Miami*, *CyberGraphX v4*, *Picasso96* and THOR's mmu.library.

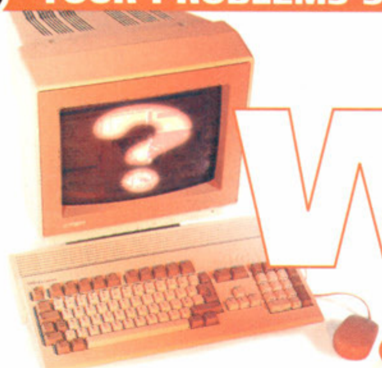
SUPPLIER: Haage & Partner
TEL. +49 (6174) 966 100
http://www.haage-partner.com/
PRICE: 49 DM, £16
REQUIREMENTS: Most of the new material requires OS3.5

Pros and Cons

- **+ Contains all the information needed to develop for OS3.5**
- **+ ReActor GUI editor means faster interface development**
- **+ StormC v3.0 for free**
- **+ A lot of documentation now also in HTML format**

OVERALL VERDICT: An essential for the Amiga programmer and incredible value for money.

93%



Workbench

On the CD -In_the_Mag-/Workbench

New millennium*, same old problems! Still, they say history repeats itself

Email: amformat@futurenet.co.uk, **putting Workbench in the subject line, or write to: Workbench • Amiga Format • 30 Monmouth Street • Bath • Somerset • BA1 2BW.**

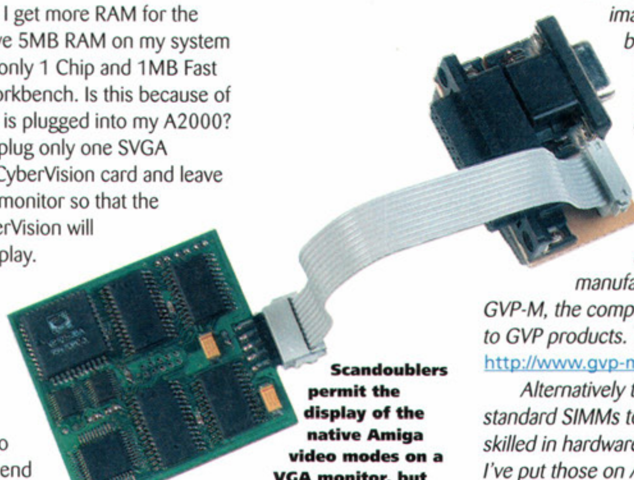
GVP AND RTG

I have an A2000 with a CD-ROM, two disk drives, a SCSI controller and accelerator from GVP, the 50MHz G-Force 030 combo with 4MB RAM, a CyberVision graphics card and Workbench 3.1.

Where can I get more RAM for the GVP card? I have 5MB RAM on my system but it gives me only 1 Chip and 1MB Fast RAM on the Workbench. Is this because of all the stuff that is plugged into my A2000?

I intend to plug only one SVGA monitor in the CyberVision card and leave out the A2000 monitor so that the SVGA and CyberVision will be the main display. But some programs still set the CyberVision image to black and the other monitor starts to work. Why? If I end the other program the image on the CyberVision starts to move again... Is this because of the RAM?

Sigma7
Portugal



Scandoublers permit the display of the native Amiga video modes on a VGA monitor, but it won't mix the native video signal with that from a graphics card.

The CyberVision takes a lot of your RAM, along with space for the partitions you hopefully have – you don't mention any hard drive, but partitions take up RAM too. CyberGraphX needs as much Fast RAM as the card is using for video images, and then some. It's based on a PC chipset and has a PC-like attitude to memory. Your board is made for non-standard memory modules, only available from GVP.

This approach was carefully designed to make extra money for the manufacturers. You might try GVP-M, the company that bought the rights to GVP products. They have a web page at http://www.gvp-m.com.

Alternatively there are hacks to adapt standard SIMMs to fit GVP boards. If you're skilled in hardware they're the best option. I've put those on AFCD48. It's hardly worth adding Zorro II RAM as it will be very slow compared with memory on the CPU card, and your CyberVision is already eating into the 8MB Zorro II address space.

Output is switching from the Amiga to the graphics card and back because CyberGraphX does not redirect all programs to graphics card screens. There are programs to redirect 'open screen' calls, but these only help applications written in a system-friendly way. I've put half a dozen of these on the CD.

The best solution is a monitor switch with a flicker-fixer or scan doubler which can combine the outputs from Amiga and graphics card, converting to VGA format and switching between them. Unfortunately I can't put those on the CD, but Eyetech sell many such adaptors.

SUPERIOR CHIP SHOPS

I would like to know if there is anywhere I can obtain a 68060 chip from in the UK, and for how much, as I intend to replace the '040 on my Blizzard PPC card with an '060. It is possible; someone has already done this. The PPC card has holes for the extra pins on the '060.

I also would like to know if a socket exists for the '060 to plug into (a la Intel), so I do not have to solder the '060 to the board. I just want a socket for it to go into, to prevent damaging the '060 whilst soldering it down.

Mike Every
via email

JAZ MOUNTLIST FOR MS-DOS

I'm looking for the way to connect my Amiga 4000 with an external iomega Jaz 2GB SCSI drive. What is the correct mountlist to read the Jaz as a PC formatted hard drive?

Giuseppe Mannino
Italy

It's easiest to use XFS, Frank Swift's freeware file system. This can read and write Amiga formats old and new, as well as PC DOS (8.3) and Windoze95 (long names) and QL5A or 5B (level 2 device) formats. It can read many more, including various Mac, Archimedes, Spectrum and CP/M formats, and the latest is on our CD.

The clever thing about XFS is that you shouldn't need a mountlist. It uses the PC formatting information on the drive – Jaz, Zip or any other type – to work out the drive capacity and partition details. The nice thing about it is that it's free.

The later commercial versions of CrossDOS are likely to be more reliable, but to interface it you'll need a mountlist corresponding to the PC's model of the drive – number of tracks, sectors and so on – which may not be the same as that returned by GetInfo in HDToolbox. If you find XFS slow, the box contains the official Jaz drive specs you need to make a custom mountlist.

Currently Aminet's FormatZIP does not support Jaz drives. If you format them on the PC, you'll have no problems. If you format them on the Amiga, use the native AmigaOS format, or PFS if you prize speed more than safety – the Jaz drive works like any other gigabyte disk connected via SCSI, so you'd be perverse to use any other format.

Consider using a block size larger than 512 bytes on Amigas with Kickstart 3.1; try 2K or 4K, trading small file space for speed. This dramatically reduces the number of buffers you need – the default 30 suits files of up to 270MB with 8K blocks, but uses 240K. The default 30 buffers thrash with standard half-K blocks on any file over a megabyte long.

JAZ DRIVE SPECS

Heads: 1
Blocks per track: 1512
Blocks per cylinder: 1512
Sector size: 512
Total sectors: 3915600
Cylinders: 3915600
Output from phase 5's SCSIConfig, via Joerg Bierwagen.



The Jaz drive from iomega offers oodles of removable storage space.

Feedback

GIF PROBLEM

Regarding the GIF Problem letter to Workbench in the November issue, there is a commodity program called Datachrome (biz/demo/DataChrome.lha) that will examine file opens and convert any type of picture to an image on the fly using datatypes. It will allow *DPaint* to transparently load GIF images without having to save the file as an IFF. It saves loads of time and is much cheaper than buying a new paint program that many people may not want or need.

Brian Donahue
via email

Thanks Brian, that seems the ideal solution to upgrade old programs to use Datatypes. It is unfortunately limited to a maximum of 256 colours by the Commodore Datatypes specification – that's enough for GIF, which has the same limitation, but other formats like PNG and JPEG which support more colours will need to be converted to 24-bit ILBMs externally or the extra colours will be lost. The Datachrome demo is on AFCD48 – thanks again for this good tip.

BARS AND PIPES

On page 61 of *AF126* Mr. Nimrod asks about Bar & Pipes, the well-known Blue Ribbon programme. I don't have any idea, where the Blue Ribbon is now, but the Italian magazine *Enigma Amiga Run* presented the whole program in his beauty on their CD number 25.

Beppe Niccolini
Italy

Unfortunately Blue Ribbon was purchased by Microsoft. For a while the Bars and Pipes files were available free on Compuserve's closed user area. These files have since been copied to sites on the Internet, and you can find them with an Amiga specific-search engine. Unfortunately their legal status is dubious and the programs are no longer supported. This unofficial site at the University of Queensland has lots of Bars and Pipes information, including advice on tracking down all the software and plug-ins:
http://svrc.it.uq.edu.au/~richard/music/bars-and-pipes

CD32 POWER

I read the "Power fault" question from Phil Waite on page 57 of *AF130*. I have a similar system and converted a standard PC power supply to fit, using an A1200 wiring diagram, but it didn't work. The CD^{32} has different connections and, if I remember correctly, one less wire.

Eyetech sorted it out for me, pointing out that if you do use a PC PSU you must use the PSU power switch and NOT the CD^{32} on/off switch or you may damage the PSU, so it's best to cover the CD^{32} switch. If Phil or anyone else thinking of adapting a PC PSU email me (Aminutt@aol.com) I'll be glad to have a look at their connections and pass on instructions.

Richy
Watford

You'll need to buy the chip from a Motorola distributor. In the past I've got '040 and '060 chips from Macro (01628) 604383 – ask to speak to the person who handles Motorola 32-bit processor sales. They'll expect you to be a company, not an individual, and will probably ask you to set up a trade account.

These people are set up for bulk and sniff at single-chip sales, so you might need to indicate interest in buying a few to get them to take you seriously. When last I checked, the full 68060 chip listed at over £200 in small quantities, which is chickenfeed to Motorola distributors. Single chips are normally supplied as 'samples' – that's how I got my first '060 – but only available while the manufacturer is pushing a new product.

These chips are much cheaper if you buy them from the USA, and the terms are easier. If you'd got a credit card I'd recommend trawling the net and getting one that way – I found it a lot easier to get a chip posted to me from the States. The solitary CPU arrived a few days later, by air, in a box 15 inches square!

Alternatively, you might buy the chips from an Amiga dealer if you ask nicely at a good moment. Dealers are also your best bet for a single 68060 socket. The difficulty with getting any high-end Motorola chip is that they are not manufactured or even kept in stock continuously. They're generally only available 'on allocation' so you must place orders months in advance if you need a specific part. Multinationals rely on sales networks which make scant account for hobbyists or enthusiasts.

You're wise to fit a socket but should be aware that this is a risky hack. If it goes wrong you can expect no support, and may not be able to replace the 68040. The circuit board has connections under the surface which you cannot patch up if they become damaged. Make sure you get the RC50 or RC60 version of the 68060 chip – other EC and LC versions lack floating point hardware and come in a surface-mount that will not fit your phase 5 card. Good luck – you'll need it.

PC INCOMPATIBLE

I followed your excellent HTML tutorial and created my own website in the space of a day. I was extremely pleased about this until I recently discovered that the site isn't appearing on my friends' PCs as it is supposed to.

I created a site with a black background, yellow/green text, and a 20 per cent maroon column down the left-hand side containing article links. My PC owning friends say that it appears with black text on a white background and the links are at the bottom.

The site appears correctly in my *Voyager* browser and a friend looked over the HTML code and said it looked correct. I'm completely stumped as to why the colour setting and layout is being ignored by everybody else's browsers.

I created the site using *Wordworth 7*, and saved the code as ASCII text. Does *Wordworth* save ASCII correctly? Maybe it isn't saving it in a PC-friendly ASCII format? My site can be viewed at : http://www.hilltop61.freeserve.co.uk. The opening page doesn't contain the 20 per cent column, but most of the others do.

Andy Clayden
via email

Remember when designing HTML pages that the rest of the world may not be able to view them as you do.



This fault seems specific to your friends' PCs. I contacted Neil Bothwick at wirenet.co.uk and he kindly checked out your site on seven browsers: AWeb 3.3, IBrowse 2.1 and Voyager, then Internet Explorer 3 and 4, Netscape 3 and 4 under Mac emulation; apparently the Netscape 4 installation soaked up 31MB of his hard disk space…

There are apparently quite a lot of validation errors, so you might benefit from running your code through HTML tidy or CheckHTML. Neil saw nothing that would cause the page layout to be warped as you describe, but reckons trouble might be caused by the PC browser being set up to ignore customer colours and use the default browser colours instead.

One problem with 'standard' PCs – and sometimes MUI – is the vast number of poorly documented options which interact in weird ways. It's a bit like buying a car that boasts 16 forward and reverse gears and 240 false neutrals, except of course that cars crash less often.

AF WEBSITE

I use AWeb-II 3.2 on my Apollo '060 accelerated A1200 and when connecting to the *Amiga Format* website at http://www.amigaformat.co.uk all I get is a white page with a black banner at the top, and Future Publishing in white writing over on the left. Clicking on the writing takes me to another page which is exactly the same although its URL is:-
http://www.futurenet.com/futureonline/
Then I am stuck and can go nowhere.

I posted my problem on afb and others responded that they too got what I got. So I

Continued overleaf ➡

used *Voyager* and was able to access the *AF* site properly. I used to be able to access *AF*'s website a few months ago and nothing has changed on my machine so why can't I get at it now with AWeb?

Jim Buckley

The AF website is put together by our parent company Future Publishing, who, like most of the computing world, hold the assumption that the only platform that exists is the Wintel PC.

The site is designed to be viewed with either Internet Explorer or Netscape Navigator – which is fine if you own a Mac or PC, but neither browser is available for the Amiga. It can be viewed with an Amiga browser, though, providing that you enable the 'Spoof as Mozilla' option in your browser's preferences. This makes it pretend to be Netscape when queried by a web server. All modern Amiga browsers support this option. Perhaps you had this turned on in Voyager without realising it.

Our website provides information on the current issue, contact details, subscription offers and so on – not any editorial content. I'm afraid that there's no alternative except to keep buying the printed magazine if you're after the latest news from our team.



It is possible to view the AF website with Amiga browsers.

CD32 KICKSTART

I own an Amiga 1200 with Kickstart 3.0 and an old CD^{32}. I have heard that the CD^{32} uses Kickstart 3.1. Is it possible to replace

CONNECTION RATES

I have an Amiga tower, 34MB RAM and 1GB hard drive. I also have a PC and was wondering is it possible to join them together and use them at the same time?

F Fanchamps
via email

I have been considering for some time whether to network my Amiga and PC together so that I may have access to a CD drive on my Amiga, or buy a dedicated drive for the Amiga. The network would reduce the clutter on my desk and give my Amiga access to the larger capacity hard drive on my PC. I cannot afford the expensive Ethernet option and my computers are sharing a printer via a switchbox, leaving just the serial ports free. I have an A1200 in its normal case, fitted with an Apollo '040 card and 32MB of fast memory.

I wonder how fast data can be transferred through the parallel and serial ports on Amiga or PC. I have seen fast ports advertised for the Amiga, but do not know how much difference they make. It would help me decide on my best way forward if you could provide the K/s throughput of the parallel and serial ports with standard and faster ports. Most people that I have spoken to are of the opinion that parallel is faster, but they cannot provide any figures.

D Thompson
Warrington

CD and hard drive prices rival those for interfaces. You get better performance from a drive directly connected to the Amiga than one accessed over any type of network, because the monolithic PC operating system can only handle one 'system call' at a time; this is a big difference between AmigaOS and MSDOS, Windows or Linux.

If you opt for direct connection, convenient when you're not sure where something is, you should not dismiss Ethernet. It's the fastest option other than sharing a SCSI bus, a trick strictly for hackers, and need not cost much more than a fast serial link.

Commercial Ethernet packages are discussed in this issue's big feature, but you can brew your own Cheapernet by shopping around. The Amiga PCMCIA driver on AFCD48 suits more than a dozen brands of Ethernet interface. Check the model against our list before you buy, as non-standard ones only work with Mac or PC-specific drivers.

At a pinch, the Amiga motherboard serial port can work at 115,200 baud – over 10K per second – but not with lots of colours on screen or other programs running. Slow machines may bottle out at just 19,200 baud, under 2K per second. Original PC serial ports struggle at half that rate, and are best suited to pen-plotters and serial mice. MSD identifies those.

The rule of thumb is to allow 10 baud for each byte, and remember that these figures are upper limits; software lags mean the full rate is never realised. The 8n1.device on our CD reduces CPU overhead by supporting fewer protocol options – it just transmits bytes, without parity checks. On your 68040, hardware, rather than software, is the bottleneck for serial transfers. Hypercom, IOblix and Silver Surfer serial ports shift up to 40K per second, using the same 16xxx chips as modern PCs.

Parallel ports can be connected, but there are compatibility problems. The Amiga has eight 'data' lines, which can be inputs or outputs, and three status lines, normally inputs. The original PC had dedicated eight outputs and four inputs for printer status; the PC parallel Laplink software uses these as general-purpose inputs with a special cable.

The differences mean you can't use a PC parallel Laplink cable and also explains why parallel ZIP drives need an adaptor. However, most modern PCs use Startech buffered parallel port chips, which also appear on add-on Amiga interfaces, so there's fresh potential for compatible connections given the right software at both ends.

EasyLink and EasyTransfer, on AFCD48, support parallel and serial connections between Amigas and PCs. The speed limit depends on cabling and mutual compatibility between the hardware ports; expect a few K per second, a few tens of K at best; either way it will be far slower than Ethernet and you'll need a custom cable.

MAGPLIP runs Ethernet protocol over a parallel link. Expect speed similar to the fastest serial ports, but more cable hassle. SLIP is worth trying between fast serial ports, but ProNet and ParNet between accelerated Amiga motherboards can shift up to 80K per second.

REALISTIC INTERFACE SPEEDS

PORT	STOCK AMIGA	EXPANDED AMIGA
SCSI	1 to 5 MB/s	Up to 20 MB/s
IDE	1 to 2 MB/s	Up to 10 MB/s
Ethernet	Not available	100 to 800 K/s
Serial	2 to 10K/s	Up to 50 K/s
Parallel	10 to 50K/sec	30 to 200 K/s

These are real-life rather than 'benchmark' figures.



Check PCMCIA Ethernet cards against this list before purchase.

A1200 PCMCIA ETHERNET CARDS

TESTED OK BY THE AUTHOR OF CNET.DEVICE:

- Accton EN2216
- CNet CN40BC
- Surecom EP-427

FOUND TO WORK OK BY OTHERS:

- Argosy EN210BT
- Dynalink L10C Combo
- Fiberline-4680
- Genius ME3000II SE
- Grey Systems Gold Card
- KingMax Technology V4.1
- LanPro NE2000 compatible
- LinkMate/Apollo RE450CT
- Linksys EC2T Combo
- Micronet SP122
- Pine Ethernet PCMCIA
- Socket Communications AAA-1001
- SureCom EP-527
- Target 100M fast Ethernet
- TrendNet TE210CT

TESTED AND NOT AMIGA COMPATIBLE:

- 3com cards
- Accton EN2212
- ActionTec FastNet PE-200
- DLink DE-650 or DE-660
- Megahertz cards
- Xircom cards

Check apparent bargain Ethernet cards against this list.

the Kickstart ROMs in the 1200 with the ones in the CD^{32}, so that I will be able to use Workbench 3.5?

Andrew Head
Cardiff

I have a CD^{32} with SX32 Pro 50 68030 and 68882 processors, 340MB hard drive, external floppies and a PC keyboard. I understand that I have Kickstart 3.1 chips fitted as standard. Are these the same 3.1 chips that allow Workbench 3.5 to be used? Typing VERSION in a shell tells me I have Kickstart v 40.60. Can I use Workbench 3.5 or will I have to buy an A1200 and start all over again?

Richy
Watford



The CD^{32}'s Kickstart ROMs are not compatible with the A1200.

Kickstart 3.1 was specifically made for the CD^{32}, though versions for other Amigas were released to developers in 1993. The versions are very similar – CD^{32}s have 40.60, A2000s got 40.62, A1200s run 40.68 and 40.70 suits Commodore's last-gasp A4000T.

Unlike the rest, the CD^{32} has a megabyte of ROM to hold the startup graphics and custom CD drivers as well as AmigaOS, so it should run Workbench 3.5, but you can't transplant CD^{32} chips or code directly to an A1200 – it would need reassembling to fit 512K and remove checks for non-existent hardware.

VERSION REVERSION

I own a desktop A1200 with a tower case housing my hard disk and a Hitachi x2 CD-ROM drive, both connected via IDE. They worked fine until I had to format DH0: to avoid validation messages that bothered me, and unfortunately lost the CD drivers. I downloaded *IDEfix* from Aminet, but the install requester showed:

```
AmigaDOS 2.04 or higher is
required for CacheCDFS

An upgrade will be needed for
your Amiga.
```

Surely this is a joke? My A1200 has Workbench 3.0. I've put the version of *IDEfix* that I used in an email attachment.

Phil R.Vlahostamatis
Greece

The IDEfix installation script consults Libs:version.library to work out what system you are running. I guess you or a sloppy installer overwrote the original file with one from a Kickstart 1 system, and that's what's confusing IDEfix.

To check this, type VERSION in a shell. This gives Kickstart 40.68, Workbench 40.35, on most 32-bit machines with Workbench 3.1, or Kickstart 39.106, Workbench 39.29 on a Commodore A1200 or A4000 that has not been upgraded. Workbench 3.5 version numbers start with 44.

IDEfix only checks the Workbench 'major version' number before the dot, which should be at least 37, corresponding to Workbench 2. The second part of the number is increased for each minor tweak and less significant, though bigger numbers should be better. All major AmigaOS components have version numbers embedded after VER$: in their code.

The VERSION command calls a small library to determine version numbers. I expect you need to update your Libs:version.library file. Copy this from a virgin Workbench 3 floppy set and the installer should be happy but, if the version.library or command are ancient, other files might also be outdated. This gives the version of the VERSION command itself:

```
VERSION C:VERSION
```

It should be 39.4 for the Workbench 3.0 file, 40.1 or later for the files shipped with Kickstart 3.1. To check the version.library on disk, or any other file, type:

```
VERSION Libs:version.library FILE
```

– the FILE argument ensures that VERSION reads the file, rather than testing a version already in memory – though that default case can also be useful if the active code is in ROM or has been unusually loaded. Add FULL to get extra details, like the creation date.

Incidentally, it was a bit of a shock to get a mail over 300K long amongst the Workbench messages automatically forwarded to my home from the AF office. It's unwise to send mails over 64K without asking first. You're expecting the recipient to pay to collect them and so you may just get them bounced back to you.

We like to receive Workbench queries by email – it saves time, retyping and possible error – but please keep them to plain text and give us your real name and location to print at the end of the letter. If you must refer to particular files supply a web or FTP address where we can pick them up if necessary.

If you mail from a PC, you should turn off Microsoft's switch that duplicates every message in redundant HTML – you're just wasting your own connect time and machine space as well as that of your unwitting targets, and it all adds up. Microsoft have a vested interest in wasting resources – they get a royalty every time a PC gets wedged with junk and needs an update – but there's no need for Amigans to suffer thus.

Simon Goodwin AF

WONKY 68030

My Amiga 1200 runs a Magnum 030/40 with 16 MB RAM and a 24-speed CD drive via EIDE'99 interface from a 250 watt power supply. I keep getting 'wait for disk activity to stop' messages and Guru 80000003/4 codes, which are dead end reports, when it reboots. This doesn't happen at any particular time but appears to be random.

Dryden Cooper
West Yorkshire

Those bugs are processor exceptions caused by the computer trying to execute data or junk in memory. 80000003 is an illegal address – usually because the last bit of an opcode is unexpectedly set – and 80000004 signifies an 'illegal instruction', one of the thousands of opcodes that Motorola do not use on your processor. Either way, if the computer runs wild, these are likely errors.

The most likely cause of these reports is a fault in the interface between processor and memory. This could be caused by lack of power or overheating, but your CPU is not running at the upper limit of speed and your PSU sounds ample.

I suspect that your accelerator is driving the memory in a mode that it cannot handle. The 68030 introduced the fastest 'burst mode' of any 68K series chip, and this causes problems on some accelerators. You can cure it by using faster memory – 40MHz pushes the bus faster than a 50MHz one, which normally has 'wait states' to let the RAM keep up – or disabling the fast transfers with the CPU command. Some Apollo 030 boards need this tweak to cure exactly the problem you describe.

Try disabling burst mode (type CPU NOBURST in a shell, or put that command in your startup-sequence) or swapping the SIMM for a faster one. If that fails, check the connection between the A1200 and the accelerator. If it's loose, random errors are likely.

GOT A QUERY?

Make sure you submit them correctly:

- **Send email to amformat@futurenet.co.uk with the subject "Workbench".**
- **Send letters to the usual *AF* address and make sure you put "Workbench" on the envelope.**
- **Include details about your machine, such as what processor and how much RAM it has.**
- **Do your best to describe your problem succinctly.**
- **Make sure it wouldn't be easier to contact the dealer you bought the item from and ask them.**
- **Be concise!**

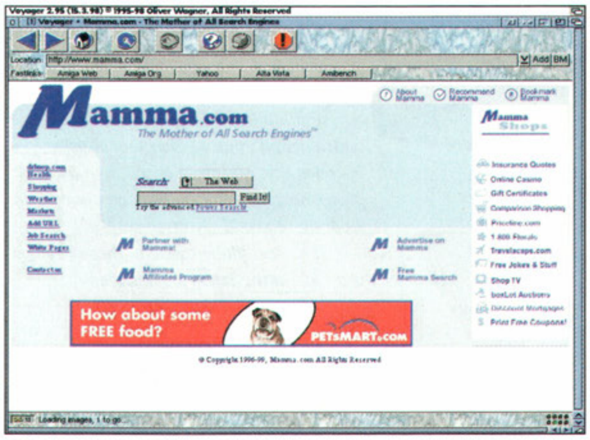
Amiga.net

When you're struggling to find the one piece of information you need, try these ways of finding a needle in the web haystack

The web is big and it's getting bigger all the time. With more individuals and businesses getting online and wanting to make their mark by producing their own websites, the number of pages in existence is growing at an ever-increasing rate. Now this has many advantages – not least because the more pages there are out there, in theory the more chance you have of finding a page containing the exact information you're seeking. On the other hand though, actually locating a given piece of information in this enormous online library is getting harder all the time.

According to one piece of recent research, between December 1997 and February 1999 the number of web pages in existence more than doubled, from around 320 million to over 800 million. In the same time, the most comprehensive search engine's database of pages fell from covering around 34 per cent of these pages to covering just 16 per cent. Yes, that's right. No matter how comprehensive you thought the likes of Altavista and Northern Light were, they only cover around one sixth of the pages on the web. And a disconcertingly high number of those which they do index seem to be dead, abandoned or simply far less useful than newer, not-yet-indexed sites elsewhere. Now there's no denying that Altavista, Northern Light et al are still worth a look from time to time when you're searching for something in particular, but many web users are becoming wise to the fact that often, the best tool for finding a particular piece of information will vary according to the type of information being sought.

No matter how comprehensive you thought Altavista and Northern Light were, they only cover around one sixth of the pages on the web



Mamma is a metasearch engine which is worth a butcher's.

During my misspent university years I was once told that the mark of a good lawyer is not knowing what the law is in a particular area, but knowing how and where to find out in a matter of moments. Similarly, the savvy surfer might not know the address of a page containing a particular titbit of information, but he or she might well know how to find it quickly.

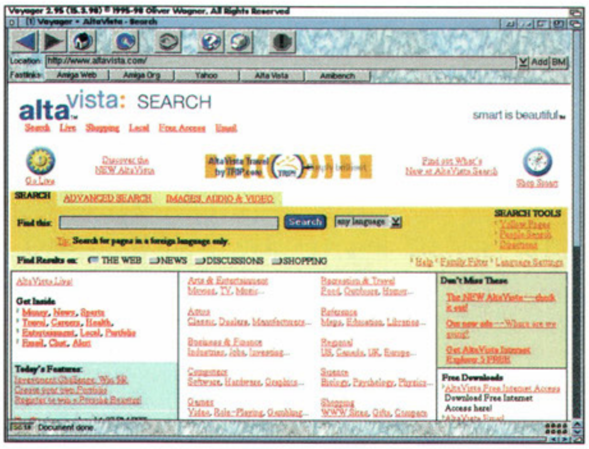
CONTACT POINT

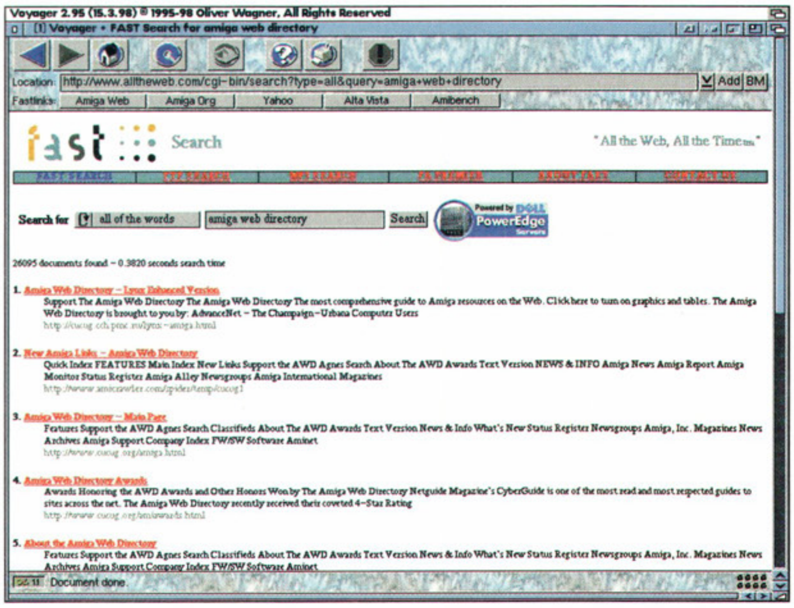
You can contact me with your comments, questions and suggestions at dave@cusick.co.uk or through my website at http://www.cusick.co.uk.

CHOOSING AN ENGINE

There was a time when I'd have advocated starting every search on a common theme at Yahoo! and every piece of more demanding research at Altavista. Alas, those days are long since gone. Yahoo! seems to have reinvented itself totally. Now it's a great place to find news and sport headlines from a variety of sources, or use one of the site's growing number of free services such as email, online calendaring and so on (if you've got a Java-enabled browser that is!). Unfortunately, it's no longer much good as a means of finding quality websites.

Altavista is still a useful index as far as it goes, but it's really sold itself out to a wealth of commercial "partners", it has a hideous new look which doesn't make using it any easier and it recently experimented with giving priority to paying sites in its search engine rankings. The company soon realised this wasn't a popular idea with the punters, but the fact that it even considered this is rather disconcerting. If you want to search the largest possible number of websites, then your best bet is probably the new kid on the block, Fast Search, which claims to index a whopping 200 million

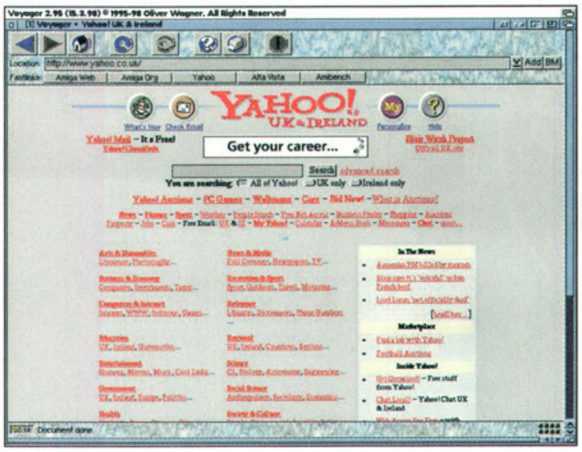




Altavista: the King is dead. And Fast Search: long live the King!



DirectHit looks awful but produces some useful results.



Yahoo! is still worth a look if you want to find subject-specific search engines and directories.

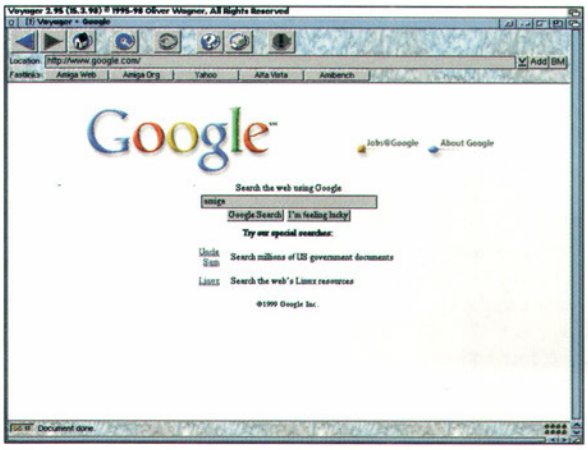
URLs – equivalent to around a quarter of all web pages. It's also astonishingly quick and it doesn't overwhelm you with adverts like most search engines do nowadays. In terms of comprehensiveness, Northern Light, Altavista and Snap are a fair way behind with around 16 per cent coverage of the web, but they're all light years in front of Yahoo!, Excite and Lycos which, according to research, cover just 7.4, 5.6 and 2.5 per cent respectively.

Call me a cynic, but personally I'm of the opinion that in the race to become all-singing, all-dancing "portals", many of the "old guard" search engines have neglected the upkeep of their databases. Most of them are so eager to offer links to online bookstores, music stores and so on that they simply don't produce such useful results as they used to. If you don't want to view search results which have a bias towards American sites, for instance, then you'll prefer Altavista to Northern Light, Lycos, Excite and so on. Altavista is one of the few big name search engines that doesn't give priority to US sites when compiling its database.

WIDENING THE SEARCH

Rather than simply depending on one search engine, often a good idea is to use a metasearch engine – a site which checks the databases of several search engines and pools the results. The most popular metasearch engines are MetaCrawler, Hotbot and Dogpile, and all are worth a look. There are also other newcomers such as Mamma (aka The Mother of All Search Engines) which could be the ones to watch in the future. Then there are the so-called second generation search engines, which attempt to move beyond simple keyword searches and provide results which are more useful or meaningful. One of the most famous and popular of these is Ask Jeeves which lets you input a question in English (such as "Where can I find English Premiership football results?") and presents a list of answers which it thinks are appropriate. Sometimes it hits the nail right on the head, other times it flounders most entertainingly – but often it's worth a look. This is particularly true if what you're after isn't that obscure because Ask Jeeves won't overwhelm you with hundreds of seemingly random search results.

Google is another interesting little chestnut, which has so far remained commendably free of adverts, commercial partners and so on. When you enter a search term, Google returns a list of the sites on that theme which are most linked to by other sites; so in other words you're presented with a list of the most popular sites on that subject. If you want to, you can even just enter a keyword, click on an "I feel lucky" button and go straight to the most popular site. Try this with keywords like "Amiga", "Manchester United", or "Houses of Parliament" and you'll see how effective it can be.



Google: simplicity, elegance, and above all, good results.



Voyager NG may spoil the image of the esteemed butler but Ask Jeeves is one of the best second generation search engines.

DirectHit works in quite a similar way. What it does is monitor the links people followed from earlier search results on a particular subject, and the most commonly followed links are elevated in its rankings. It's worth a look, even if it does employ one of the most horrific colour schemes you're ever likely to see on a commercial website. It's also worth remembering that there are a multitude of what might be called specialist search engines. If you want to find coverage of a topic on Usenet, for instance, forget about web search engines – even those, like Altavista, which offer a "search Usenet" option. Instead, plump for a specialist engine like Deja. If you're searching under a specialist subject, for instance, if you wanted to use a football site search engine to uncover any sites dedicated to a less well- known side, then bring Yahoo! in from the doghouse. It generally lists a selection of directory sites within each of its categories.

Dave Cusick

SEARCH ENGINE URLS

Altavista http://www.altavista.com
Ask Jeeve http://www.ask.com
Deja http://www.deja.com
Direct Hit http://www.directhit.com
Dogpile http://www.dogpile.com
Excite http://www.excite.co.uk
Fast Search http://www.alltheweb.com
Google http://www.google.com
Hotbot http://www.hotbot.com
Lycos http://www.lycos.co.uk
Mamma http://www.mamma.com
MetaCrawler http://www.metacrawler.com
Snap http://www.snap.com
Webcrawler http://www.webcrawler.com
Yahoo! http://www.yahoo.co.uk

Creative

The complete beginners guide to... Drives

Show your disks just who's doing the driving with this guide to mass storage

The next installment of our increasingly popular Beginner's Guide series gives the low-down on drives. The focus is mainly on hard drives because, for a component of computer systems that we all rely on so heavily, they do seem to cause people a lot of problems. Hopefully, this guide will cut down on the number of desperate readers 'phoning us up, pleading for help with invalidation problems. But I doubt it.

Sadly, all things must come to an end, even tutorials on how to make your Amiga sing in new and interesting ways. This issue sees the final part of Tony's Synth Studies series. We have a number of ideas for a tutorial to run in its place, but, just to be mean, I'll leave you to find out what when you buy the next issue. The curtains will be closing on some of our other series soon, so if there's anything you would like to see covered creatively, let us know.

Richard Drummond

CREATIVE INDEX

Once upon a time the majority of Amiga users made do with floppy drives for storing data and for booting their systems. Today, such an idea would be repellent. We are all used to gigabytes of hard drive space to augment our machines' main memory and for permanent storage; we buy software on CD-ROM and transport data on Zips both by the megabyte.

While all these mass storage media can be used, for the most, transparently, a little knowledge of what's going on in the background can help you get the most from your drives, help you prevent data loss, and help you recover when things go wrong. This is what this tutorial is about.

This is where the mountlists hang out. These are the files that tell your system how to manually mount drives.



INTERFACES AND DRIVERS

The two main types of interface for attaching drives to a computer are SCSI (Small Computer Systems Interface) and ATA (AT Attachment, so named because it was first used in IBM's PC AT). The latter is commonly known as an IDE interface, but this is actually incorrect: IDE stands for Intelligent Drive Electronics and refers to the type of drive which is connected to an ATA interface. ATAPI (ATA Packet Interface) is a SCSI-like extension to the ATA command set which allows the use of removable media like CD-ROMs and Zips.

Whichever type of interface you use on your Amiga, you require software for the OS to talk to it, a device driver. The naming of device drivers on the Amiga is rather bizarre. SCSI interfaces usually have some variation on the name scsi.device, which is sensible enough, but so do ATA drivers. In particular, the drivers for the A1200 and A4000 internal interfaces are both called scsi.device. Until the release OS3.5, you required an additional driver to be able to use ATAPI devices with these interfaces, such as the atapi.device available in the IDEfix package.

MOUNTAINEERING

To start at the beginning, it is useful to know how AmigaOS recognises drives attached to your system. The process of a drive being made accessible to the OS is known as mounting. For this to be able to happen, the OS needs three things: a device driver, a filesystem and some information on how the drive is set up. The device driver is the software that performs the low-level communication between AmigaOS and the interface controller that the drive is connected to. A filesystem is the handler program that tells the DOS how file information is stored on the disk.

Since WB1.3, AmigaOS has been able to automatically mount drives at boot time and hence boot from a drive – before that booting was possible only from floppies.

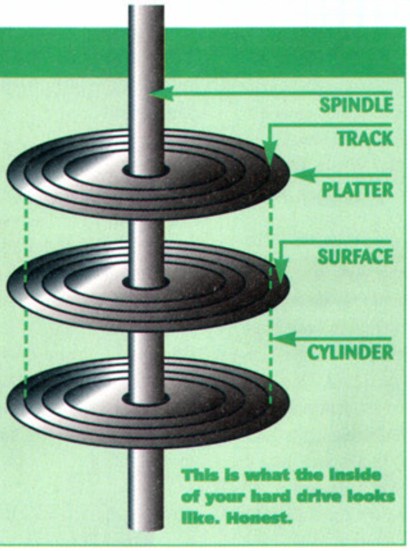
To automount a drive, it's device driver must be present in ROM, either in the Kickstart ROM – like the built-in driver for in the internal ATA interfaces on the A1200 and A4000 – or on the interface controller itself – like the 1230scsi.device on phase 5's SCSI add-on for the Blizzard 1230. In the latter case, the driver is made resident in memory during the Amiga's AutoConfig process, the Amiga's superior equivalent to Plug'n'Play. The configuration details for the drive is stored on the drive itself in an area, normally occupying the first two cylinders, known as the Rigid Disk Block (RDB). This stores information on the drive's geometry, how the drive is partitioned, which filesystems are used on each partition, etc. The filesystem code for an automountable partition must be either in ROM or is stored on the drive itself after the RDB and the partition info.

For drives that must be manually mounted, a configuration file called a mountlist must be present. This contains

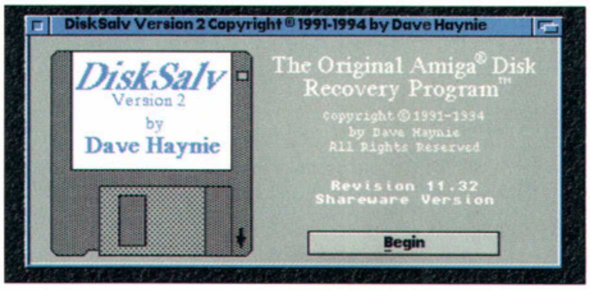
DRIVE GEOMETRY

The size of a drive is generally measured in cylinders and its geometry describes how data is physically organised on the drive. A hard drive usually consists of several physical disks, known as platters, mounted on a single spindle. The surface of each of these disks has it own head for reading and writing data. Data is stored on a platter in concentric rings called tracks and a track is divided into sectors, most commonly of 512 bytes in size. Now, a cylinder is a set of tracks, one from each surface, with the same track number.

As far as the user is concerned, AmigaOS doesn't much care about the physical layout of data on the drive, it has its own logical organisation. A drive is divided into one or more partitions, each of which is treated by the OS as a single volume. Each volume is divided into blocks. The block size is generally the same as the sector size, that is, 512 bytes, but can be larger if the filesystem supports it.



This is what the inside of your hard drive looks like. Honest.



DiskSalv is the Amiga equivalent of the AA: it rescues drives that have broken down.

much the same information as would be stored in an RDB and, since WB2.1, is stored either in the Devs/DOSDrivers drawer or the Storage/DOSDrivers drawer of the boot disk. Drives (or, indeed, other devices) with mountlists in the former drawer are mounted by the startup sequence; ones in the latter may be mounted either with Mount shell command or by double-clicking their icons from Workbench.

Typically, the manual mounting of drives is useful only for removable media like CD-ROMs and Zips. It is possible to store an RDB on a Zip disk and even boot from one, but unless you give all your Zips the same device name, it tends to confuse the system. You also lose the benefit of portability of data with other platforms.

How you partition your drives is very much up to personal taste and how much space you have available but I tend to store volatile data separately

DIVIDE AND CONQUER

It is common practice to split up the physical storage space provided by a single drive into several logical drives, known as partitions. This is done for a number of reasons. For one, it makes backups easier if you keep programs in one place and data in another: data changes more quickly and so needs more frequent archiving. For another, it makes your system safer: damage to one partition will generally not affect other partitions. Another reason might be that you run additional operating systems such as Mac emulation or Linux which require their own separate partitions.

How you partition your drives is very much up to personal taste and how much storage space you have available, but a sensible scheme might be to have Workbench, programs and data partitions. The Workbench partition would be bootable and contain all the system files, small tools and utilities. A minimum size for this would be about 20MB. The programs partition would then contain all your applications software, your paint package, word processor and so on. The last partition would be used for all your projects, documents, pictures, etc. This last partition would be the most volatile. If you didn't install any new software, the Workbench and Programs partitions could be backed once and forgotten about. All changes would be restricted to the third partition and so this would be the only one which required regular backups.

If you have more space available, additional partitions may be beneficial. For example, I use a separate partition for my web browser's cache. This is because the data stored here is extremely volatile and doesn't require backing up at all. By separating this from the rest of the system, it doesn't cause any unnecessary fragmentation and if the browser crashes while writing to the cache it doesn't put any data at risk. If the worst comes to the worst, I can just reformat the partition.

HDTOOLBOX EXPLAINED

The standard tool for partitioning an Amiga drive is called *HDToolBox*, a program known to strike terror in the hearts of even the most stalwart of Amiga user. Once you get to grips with it though, it's not that scary. This guide covers the OS3.5 version, but, although previous releases have a slightly different interface, they are very similar to use.

When you run *HDToolbox* a list is displayed showing the drives attached to your system (figure 1). With a new drive, the first step is to read its geometry information and install an RDB. This is done by clicking the 'Install Drive' button. A window should appear stating the drive manufacturer, size, number of cylinders and so on (figure 2). The 'Read Configuration' gadget will update this information by querying the drive. If everything looks okay then hit the 'Install' button and the RDB will be created. This should only be performed on a new drive since it will overwrite an existing RDB.

You are now ready to partition the drive, so once back to the drive list click the 'Partition Drive' button. A window like figure 3 will now be displayed. The bar at the top shows how the drive is divided into partitions. The currently selected partition is highlighted in blue and its details are listed underneath.

1 Buffers: Sets the number of blocks that AmigaOS will use by default for caching directory information for this partition. More buffers will mean faster access of drawers with many files, but will require more memory. Additional buffers may be added temporarily with AddBuffers shell command.

2 Partition Name: The unique device name to use for this partition. The

Continued overleaf ➡

FIGURE 1

HDToolBox displays a list of all the drives that it can find. The ability to recognize removable media, such as this CD writer, is a new feature of OS3.5.

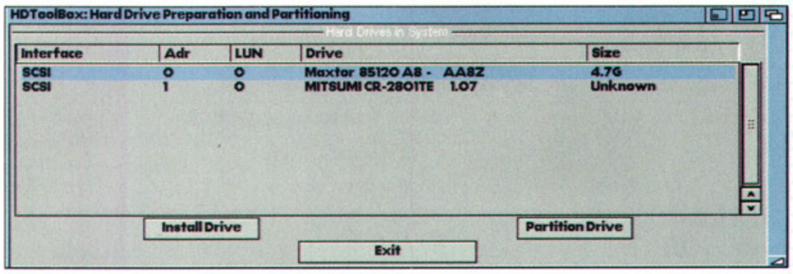
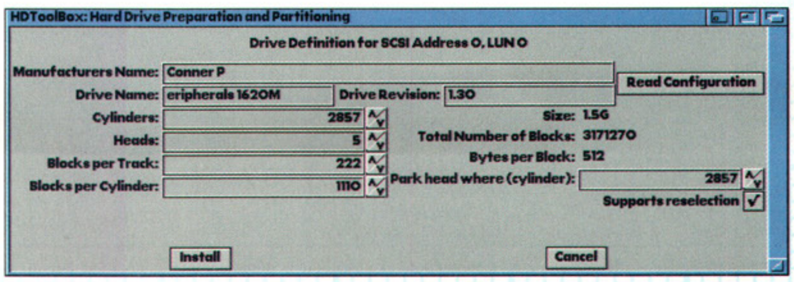


FIGURE 2

HDToolBox has to find out the geometry of your drive before you can begin partitioning.



TO 4GB AND BEYOND

Up until OS3.5, AmigaOS could only reliably handle drives smaller than 4GB. This is because locations on a drive were addressed using 32-bit arithmetic and the largest number storable in 32 bits is a binary four billion. Various methods to work around this limit have been created.

The officially sanctioned method is via NSD, New Style Devices. This is a new specification for all device drivers in AmigaOS, not just disk devices, and adds commands for doing 64-bit operations. Old style device drivers can be patched to look like New Style Devices with a command called NSDPatch. With the release of OS3.5, *NSDPatch* is built into the *SetPatch* tool. Also, the *FastFileSystem* has been updated to handle 64-bit arithmetic, as well as the Format and Info commands and *HDToolBox*.

Another, third-party solution is *TrackDisk64*. This is a specification for device driver developers and again adds new commands to handle 64-bit operations. Most modern controllers will have drivers that are compatible with *TD64*. A patch is available to convert the old FastFileSystem to work with *TD64* device drivers.

There are still some points to be aware of when using large hard drives. The maximum partition and file size is still 4GB. Also, you must be careful what software you use with partitions located after the 4GB barrier on the disk. If you are using the OS3.1 version or earlier of the Format command, partitions after the limit must only be QUICK formatted. Tools like *ReOrg*, the disk optimiser, and *DiskSalv*, the recovery tool, will not work on partitions after the limit.

volume name or label is set when the partition is formatted.

3 Boot priority. The device with the highest priority is the one that is booted from by default. Floppy drives always have priority 5, so set it less than this if you still want to be able to boot from a floppy.

> *You can change a partition's name, bootable status and priority without losing its data but it's always best to have a backup before playing around*

4 Bootable. Can the system be booted from this drive.

5 Default Setup. This pop up gadget can be used to divide a drive into one to eight standard partitions.

6 Change: Clicking here will move to a new window allowing you to modify the details of the filesystem used on this partition.

7 Add/Update: This allows you to add a new filesystem type or update an existing one. For filesystems other than the version of *FFS* built into the Kickstart ROMs, you have to tell *HDToolBox* where to find the handler code on disk.

8 Save: Click here when you are happy with the partition layout, filesystems to use, etc. This will update the RDB with the new partition details, so make sure you've got it right.

9 Cancel: Abandons any changes you've made without saving.

The current partition's size may be adjusted by moving the blue arrows beneath the bar or changing the contents of 'Start Cyl' and 'End Cyl' gadgets. Partitions may be deleted, or new ones created if there is some unused space.

The 'Change' gadget on the partition window allows you to modify the filesystem details for a partition. This window will look like figure 4.

10 Filesystem: Selects one of the already defined filesystems to use on this partition.

11 If 'Standard File System' is chosen above, these allow you to set various modes, such as Fast File System, International mode and directory caching.

12 Automount: Tick here if the partition is to be mounted automatically. Otherwise, it will require a mountlist to be accessible by AmigaOS.

13 Identifier: Identifies the filesystem type. It doesn't need to be filled in unless, you've chosen 'Custom File System'.

14 Mask: If the drive is capable of DMA transfer, this specifies what type of memory to use. For Zorro II devices it should be 0xFFFFFC and for Zorro III devices or the internal ATA interfaces it should be 0xFFFFFFFC.

15 Max Transfer: Specifies how large a block of data can be transferred to the drive in one go. SCSI devices can generally handle large blocks, so a value of 0xFFFE000 (16MB) should be fine. Some IDE devices require a much smaller setting, say, 0x1FE00 (127.5K) or 0xFE00 (63.5K). If large files get corrupted when writing, try reducing this value. The Max Transfer setting should always be an even multiple of the drive's sector size (usually 512 bytes). A simple way of ensuring this is for the number to end in 'E00'.

16 Block size: This should usually be equal to the sector size of the drive (512 bytes), but some filesystems may support larger block sizes.

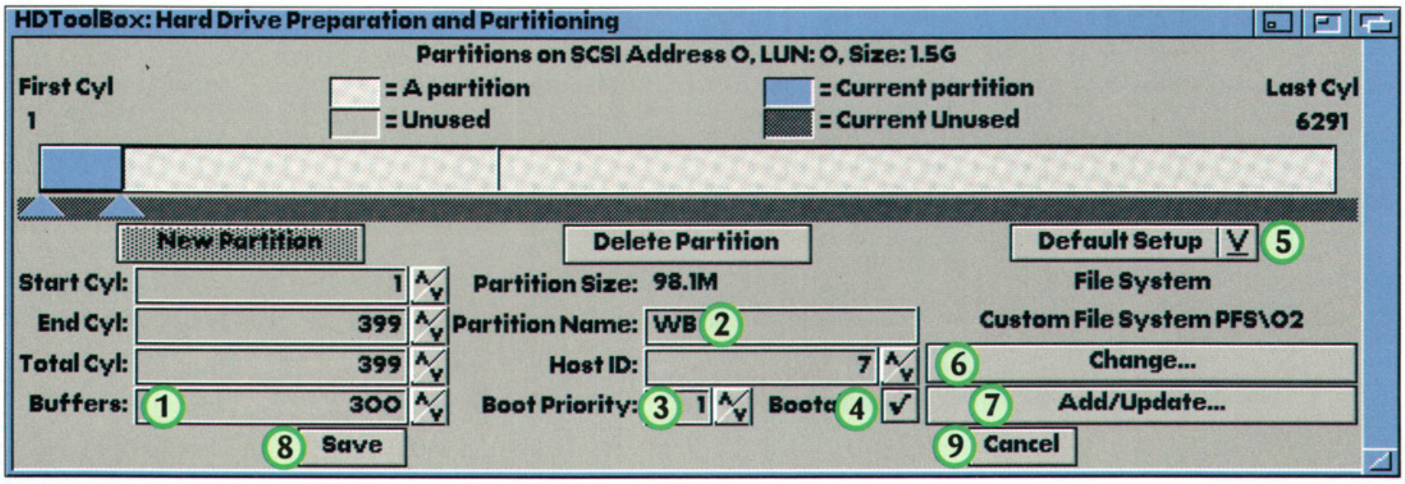
You may change certain aspects of a partition's settings without putting its contents at risk. If you modify the start or end locations of a partition, change the filesystem type to another non-compatible one or modify the block size, then it will become unusable until re-formatted. You can change a partition's name, bootable status and priority, number of cache buffers, max transfer, mask and automount settings without losing its data. However, it is always best to have a backup of your drive, before playing about with the partition table.

BETTER TO BE SAFE...

Things go wrong with drives, as with everything else in the universe. As long as you take reasonable precautions, though, you should never lose data. Damage to drives can often be repaired with tools such as *DiskSalv*, but you should never rely entirely on such recovery software. It cannot be stressed enough how important backing-up your hard drives is. It is possible, although unlikely, to lose the entire contents of a drive. Restoring all the software to your machine and all your settings in such an event could take days of work.

For safe back-ups you need two things: some back-up software and a storage

FIGURE 3



HDToolBox may look complex, but it isn't once your learn what all these options mean.

FILESYSTEMS

The standard filesystem shipped with Workbench1.3 and above is the erroneously-titled *FastFileSystem* (FFS). It sports two basic modes of operation. The first offers compatibility with the previous standard filesystem and is thus known as *OldFileSystem* (OFS), while the other is the full *FastFileSystem. FFS* also offers two additional modes which can be used in conjunction with either of the previous two: International mode offers more intelligent case conversion with non-Latin characters and the Directory Caching mode attempts to speed up directory listing by caching directory information on disk.

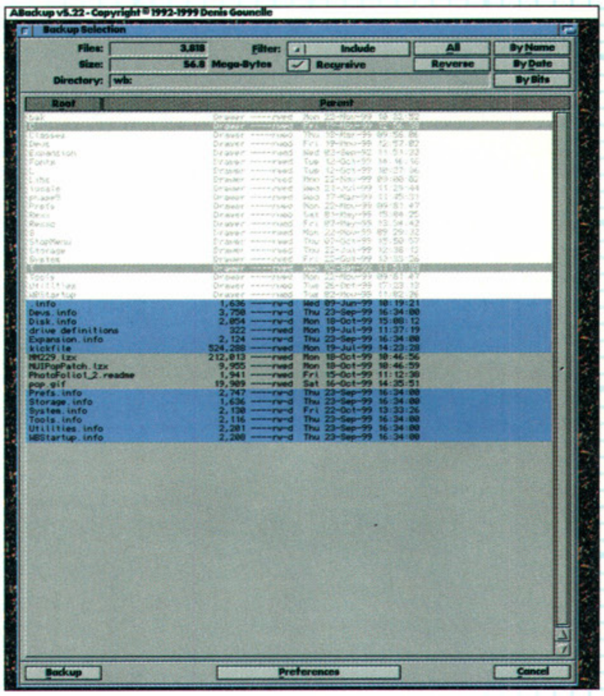
ID	FILESYSTEM
DOS0	OFS
DOS1	FFS
DOS2	OFS (International)
DOS3	FFS (International)
DOS4	OFS (International with directory caching)
DOS5	FFS (International with directory caching)

FFS has a number of problems: it is slow, prone to fragmentation and is insecure. If your system crashes while writing to an *FFS* partition, that partition is likely to become invalid and unusable. A lengthy revalidation process must be performed before the partition can be accessed again. Sometime the built-in re-validator cannot fix the damage and you will have to use a repair tool like *DiskSalv* to do the job.

An alternative to *FFS* are third-party filesystems like *PFS* (reviewed last issue) or *SFS*. Both are several times faster than *FFS* in operation and have the benefit that partitions never become invalid. The price is incompatibility. Disk tools such as *ReOrg* and *DiskSalv* will not work with anything other than standard *FFS* partitions.

device. The software is easy; there are many good utilities available, such as the excellent freeware offering *ABackUp*. At a pinch, you could even use an archiver like LhA although not as comfortably. The storage device is more tricky and will probably involve the outlay of some cash. It is no longer feasible to use floppies for your main back-ups. Larger removable media like Zips or LS120s are a much better alternative, but the media themselves are rather expensive. A CD-ROM writer is a good solution these days, since blanks CD-Rs are so cheap.

The next question is what to back up. A good place to start is your Workbench partition. This will be relatively small and a pain to re-install and re-configure to your liking if it becomes irrecoverably damaged, so it is safer just to dump the whole thing to storage. For application software, however, it is not necessary to back up the actual program files if you have their original install disks to hand. Make sure you do copy any settings files, however. Any personal data should be archived regularly, since this is not easy to replace. There are things you can avoid to cut down on storage space and back-up time.



ABackUp is an easy-to-use program to manage your back-up procees. And what's more, it's free.

Don't bother storing the T directory of your Workbench disk, your browser's cache, the place where your editor stores back-up files or any other locations which store only temporary files.

When you've made your initial back-ups, the work load can become smaller. Next time you only need to back-up the files that have changed since you last stored them. This is a process known as incremental back-ups and is achieved via the 'A' attribute of AmigaDOS files. When you back-up a file, your archiving tool will set the 'A' flag on that file, indicating it has been archived. Any subsequent write operations on that file will clear the 'A' flag. When you do an incremental back-up, you only need to store the files without the archived flag set. Your back-up tool will have an option to do this.

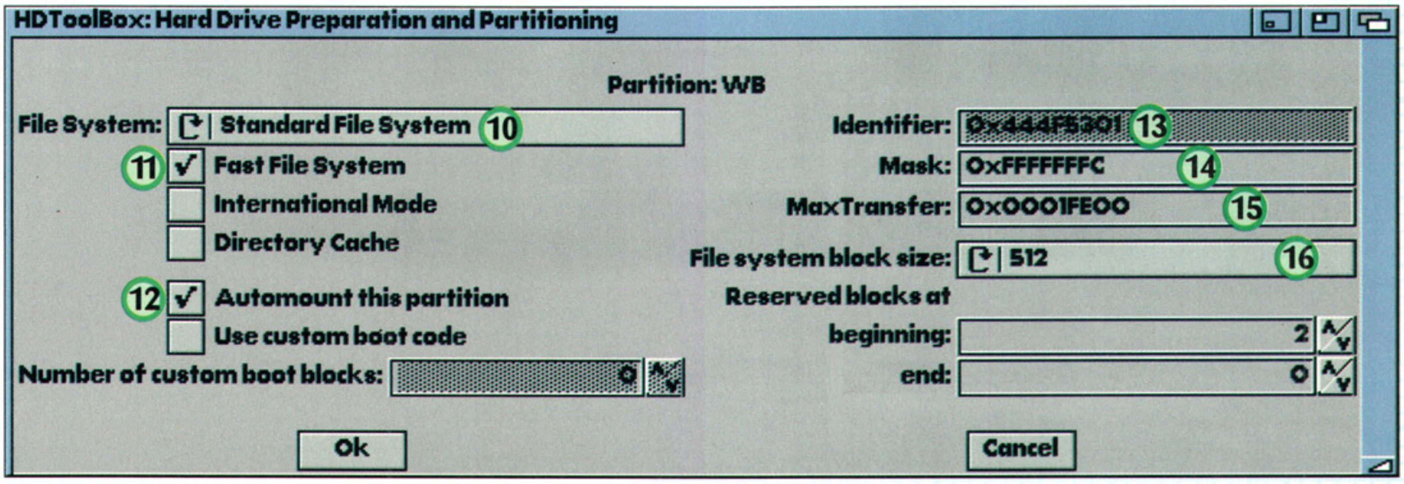
Storing the drive's RDB while backing up the contents of your drive ensures the drive remains usable if ever the RDB becomes corrupted

As well as backing up the contents of your drive, it also possible to store its RDB. If the RDB of a drive becomes corrupt, the drive will become unusable even if the rest of its data is intact. Recovery is a simple matter of restoring the RDB to its previous settings. While this is possible to do by hand, you have to get it exactly right for it to work. It is much safer to reinstall the previously stored RDB. A tool such as *SaveRDB* or the new OS3.5 *HDToolBox* will let you to load and save RDBs as plain files.

It's also a good idea to have an emergency boot disk, a bootable floppy disk with a bare minimum install of Workbench, any drivers you need for your system (particularly monitors drivers and the driver for your backup medium) and perhaps a copy of your backup tool. Then, if your hard drive becomes unbootable, you can fire up your system from the floppy and then restore or repair.

Richard Drummond

FIGURE 4



This is the part in HDToolBox where you select which filesystem is used for a selected partition.

Practical JavaScript

On the CD -In_the_Mag-/JavaScript

Stop the old-fashioned triplicates and bring on the good-looking, user-friendly forms with our help

For clarity, we've added the ¶ sign in the listings to show where you need to enter a Return.

Forms are an excellent way of getting input from visitors to your site. However, unless you are able to write and upload your own CGI scripts, you are very limited in what you can do with them.

Most ISPs only provide some sort of form-to-email script to send the contents of the form to you. JavaScript is able to work with each element of a form, as well as the complete form, and there are various event handlers associated with forms. This means you can process information from forms on the visitor's browser with no need for CGI scripts and no network delays while scripts are run. It also means you can do do things like checking the contents of a form before sending it to the normal form-to-mail script.

FORM EVENT HANDLERS

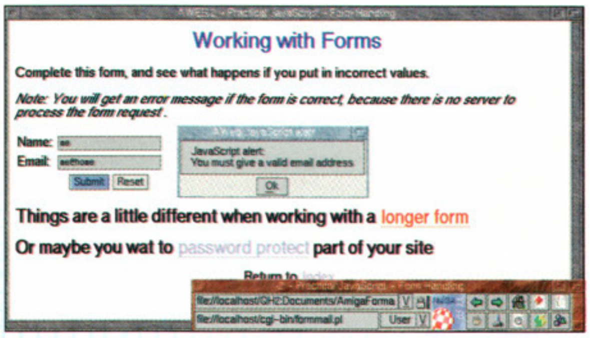
We have already seen the `onSubmit` handler. Its partner is `onReset`. As you would expect, this is called when the reset button is clicked, and the form is not cleared if the function returns false. The most common use of this is:

```
onReset="return confirm('Do you really want to
clear the form?')"¶
```

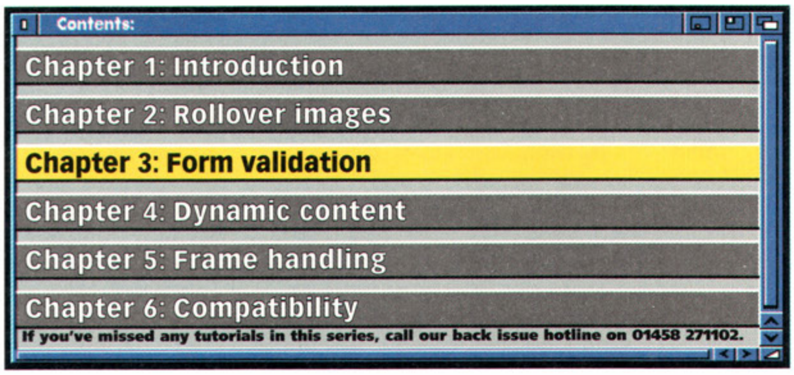
This asks the user if they want to clear the form and returns false if they don't. The `confirm()` function is similar to `alert()` except that the requester has two buttons, OK and Cancel. It returns true if OK is pressed, false for Cancel. However, onReset doesn't seem to work in anything but *Netscape*.

The `onChange` handler applies to text, textarea, fileupload, password and select objects. In the case of the first four, the handler is invoked when the cursor leaves the object after changing the contents. For the select object, `onChange` is invoked when a new selection is made.

The other form elements; checkbox, button, radio, submit and reset, use the `onClick` handler. As the name implies, this is run whenever the user clicks on the object.



Not only are we checking that the fields have been competed, we are also testing whether the email address is valid.



Here's a basic example:

```
<form name="SimpleForm" onSubmit="return CheckForm();" method="POST"
action="/cgi-bin/formmail.pl">¶
<input type="hidden" name="recipient"
value="javascript@amigaformat.co.uk">¶
Name: <input type="text" name="realname"><br>¶
Email: <input type="text" name="email"><br>¶
<input type="submit"><input type="reset">¶
</form>¶
```

This is a standard form with two input fields, the only difference is the `onSubmit` handler. The handler performs the defined action and only submits the form if it returns true. So you can use this to check the contents of the form before sending them. If anything is wrong, the form isn't sent. This calls the following function and returns its result. The function is a lot simpler than it looks. There are two lines that do the real work, the rest has been covered before.

```
<script type="text/javascript" language="javascript">¶
<!–¶
function CheckForm()¶
{¶
    if (document.SimpleForm.realname.value.length == 0)¶
    {¶
        alert('You must give a name');¶
        return false;¶
    }¶
    {¶
        alert('You must give a valid email address');¶
        return false;¶
    }¶
    return true;¶
}¶
// –>¶
</script>¶
```

The `if` statement executes statements depending on whether a condition is true. The syntax is:

```
if (condition) {statements} else {statements}¶
```

The `else` part is optional. If you only have a single statement, the curly braces aren't needed. The parentheses around the condition are compulsory. This it's used in the script:

```
if (document.SimpleForm.realname. value.length == 0)¶
```

In English, this is referring to "the length of the value (contents) of the realname field of the form called SimpleForm in the current page". The `==` function tests for equality (the `=` operator is used to assign values). The form object is `document.SimpleForm.realname`.

PASSWORD PROTECTING A PAGE

It's not possible to securely protect a web page without access to CGI scripts or the server configuration files. JavaScript source is visible to the user, so proper password checks are difficult. But there is a reasonably secure method you can use with JavaScript. It's a variation on the "hidden URL" method, where you give the page an obscure URL and don't link it from anywhere. This makes the page almost impossible to find without knowing the exact URL but means the user has to type in a long URL to gain access. This short JavaScript form makes the process easier:

```
<form name="PasswordForm"
onSubmit="location.replace('hiddenfiles/' +
this.pword.value +¶
'.html');return false">¶
<input name="pword" type="text">¶
</form>¶
```

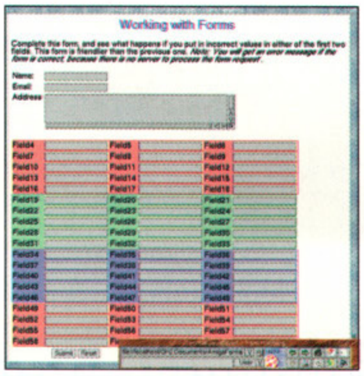
There is no Submit button, because a form containing a single text field is submitted when Return is pressed in the field. The onSubmit action uses the `location.replace()` **method. This takes a URL as an argument and loads that URL in place of the current document. In this case, the URL is based on the password. The handler is called by the form, so that's what "this" refers to. So,** `this.pword.value` **is the same as** `document.PasswordForm.pword.value`**. The handler ends with "return false" because we don't want the browser to try to submit the form anywhere, everything is done by** `location.replace()`**.**

This has the property `value`, which holds the contents of the input box in this case. This is a string object, and any string object has the property `length`. If the length of the input box's contents is zero, i.e, it's empty, the function puts up an error message to let the user know what's wrong and returns false to prevent the form being submitted.

The second `if` statement uses a different test, we check that the email box has what looks like a valid email address.

```
if (document.SimpleForm.email.
value.indexOf('@') == -1 )¶
```

The `indexOf` method returns the position of the first occurrence of the argument, or -1 if it is not found. If the email field contained me@my.isp.com, `indexOf('@')` would return 2 (the first character is at position zero) and `indexOf('m')` would return 0 since it returns the first match. You can change the start position with a second argument, `indexOf('m',2)` would start searching at @ and return 3. The position returned is always counted from the beginning of the string, no matter where the search starts. Any valid domain will contain at least one full stop, and this will be after the @. We can check for this using `indexOf`'s companion, `lastIndexOf` to return the position of the last full stop in the address.



You wouldn't want to spend time completing the whole form only to be told there was an error near the start. onChange lets you check the user's input as he enters it.

```
if ( (document.SimpleForm.email.value.indexOf('@') < 1 ) ||¶
      (document.SimpleForm.email.value.indexOf('@')   >=¶
       document.SimpleForm.email.value.lastIndexOf('.')) )¶
```

This is split over several lines for readability, but it would work just as well written on a single line. We've introduced a new operator, `||`, the logical Or. The following statements will be executed if at least one of the conditions is true, if there's no @ or there's no full stop after the @. If both conditions have to be true, use `&&`, the logical And operator. The first test checks that the position of the @ character is at least 1. Zero would mean that the address started with @.

Popping up a warning requester when the form is completed is fine with a short form like this. If you have a long form and the `onSubmit` function picks up an error in an early field, your visitor has to scroll up to find the fault, correct it and then scroll back down to the bottom to resend, hoping that the `onSubmit` function doesn't pick up another error. There is a solution, each form element can have an event handler attached to it.

```
<input type="text" name="realname" onChange="CheckName();return
true">¶
```

The `onChange` handler is invoked when the contents of the input box are changed. It doesn't happen for each character typed, which would be a horrendous waste of CPU time, but when the input is complete. That is, when the user moves the cursor to a different field or presses Return or Tab. Once this happens, the browser executes this function

```
function CheckName()¶
{¶
    if (document.LongForm.realname.value.length == 0)¶
    {¶
        alert('You must give a name'); return false;¶
    }¶
    return true;¶
}¶
```

You can add a function to check each field, although if you are only checking whether the field contains data or not, a more general function would be better than a separate one for each field. Here's a general function to test that a field contains some data.

```
function CheckField(Field,ErrorMessage)¶
{¶
    if (Field.value.length == 0)¶
    {¶
        alert(ErrorMessage); return false;¶
    }¶
    return true;¶
}¶
```

Did you see that we sneaked in another new feature here? We have given the function two arguments. The first is the field to check, the second is the error message to be shown if the field is empty. The definition of the input box is now:

```
<input type="text" name="realname" onChange="CheckField(this,'You
must give a name');return true">¶
```

The first argument given is "`this`", which contains the current object. In the case of an `OnChange` handler, this contains the field object. With the `onSubmit` handler, this contains the form object.

Our form now checks that each field is valid as the user leaves it. However, a user could skip a field completely, bypassing the `OnChange` handler so we still need an overall check from `onSubmit`. This is a lot easier now, since we already have the functions to check these fields. The `onSubmit` handler could now call a function like:

```
function CheckFullForm(ThisForm)¶
{¶
    if (CheckField(ThisForm.realname,'You must give a name') ==
false) return false;¶
    if (CheckField(ThisForm.address,'Please complete the Address
field') == false) return false;¶
    // add any other checks here¶
    if (CheckEmail() == false) return false;¶
    return true;¶
}¶
```

We use a separate function to check the email field because we are doing more than checking whether it is empty or not. This is the same as the check we used before but as a separate function.

Neil Bothwick

Useful ARexx

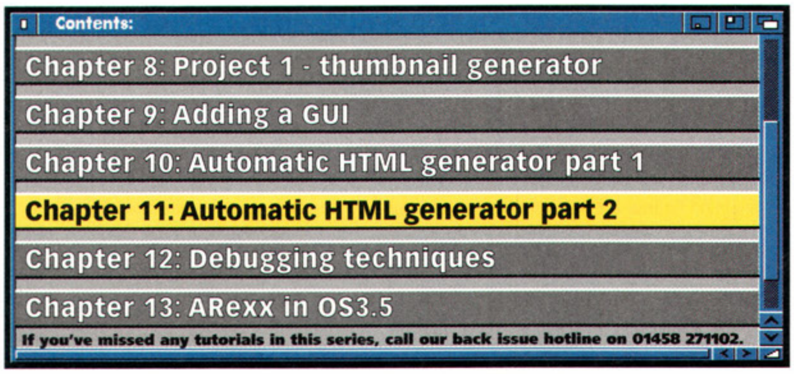
Drum roll please – it is now time to reveal the automated script which will construct your website for you!

Well, here it is. This rather massive bit of code (compared to our previous efforts) is the automatic web page maker I said we would construct. Sorry it wasn't finished in time to go on the CD, but I promise it will go on the next one!

Someone emailed me and said that this wasn't a very good project as the pages could easily be created on a real website using an SQL database and some dynamic HTML code. Well, this is true, but this is still very useful because:

1. The pages created here don't need to be run on a server, they can be used on a CD, hard drive or whatever.
2. Even if you had an ISP account, most of them won't allow you to create server intensive pages or scripts.
3. Even if you did, this method is actually faster, as the server merely has to supply the HTML rather than generate it.
4. It's just an example. You can modify it to create all sorts of things.

The script isn't that complicated if you have been following the series so far. Basically, it just processes a lot of files. Using DOS commands to get the directory names and sort them into order might be considered cheating by some purists, but it saves either integrating another ARexx library, or adding about another 50 lines of code to do it yourself.



One important word about the way this script is constructed – it uses a procedure to process each directory. The main program sorts out the list of directories and then passes them one at a time to the procedure, which generates the HTML files for that directory. There are two reasons for this. The first is that it is much easier to follow the program as a whole by putting this task into a procedure. The second reason is that I actually wrote the Directory handling part first. This was by far the most complicated part to get right, so I created it as a stand alone program first. This meant that I could run it on its own and check that it worked before building the rest of the program. Part of it works perfectly.

Anyway, that's it for now. Next time we'll be debugging your own scripts!

Nick Veitch

Listing

```
/*Arexx web page creator       */
/* VER$ 1.4, 21/11/99 N.Veitch*/
/* USAGE: Must be called with a full pathname to a      */
/*directory containing sub directories to be catalogued */
/*Example:   rx makeweb.rx Work:Images/comics/          */

/* Get the directory name */
Parse arg dirname
/* make sure directory ends with a slash */
IF ~(RIGHT(dirname,1)='/') THEN DO
   dirname = dirname || '/'
END
/* Set up a path for a temporary file */
temp = 'ram:plop'
/* Set up a Linefeed character for formatiing HTML output*/
LF = "0D0A"X
/* Create a file with a list of all directories at the
given location */
commandline = 'list >' temp ' ' dirname'#? dirs LFORMAT %s'
ADDRESS COMMAND commandline

/* Use AmigaDos to sort this file alphabetically */
commandline = 'sort ' temp 'TO RAM:sorted'
ADDRESS COMMAND commandline
/* Open the sorted file and count the number of directories
Also, read the directory names into the name. compound
variable for later processing  */
x = open('input', 'RAM:sorted', "R")
count = 1
DO UNTIL EOF('input')
   name.count = STRIP(READLN('input'))
count = count + 1
END
/* Main loop to process all the directories */
Do i = 1 TO count - 2
   SAY ' Doing ' dirname || name.i
   /* call directory function to process files */
   result = directory( dirname || name.i || '/')
END
/* create html for sidebar */
SAY 'Creating sidebar'
x = OPEN('sidebar',dirname||'sidebar.html','W')
WRITELN('sidebar','<HTML><BODY BGCOLOR="#9999FF">' LF LF)
/* Write individual links for each directory */
DO i = 1 TO count - 2
outline = '<A HREF="'|| name.i|| '/content.html"
target="main"> ' name.i ' </A><BR>' LF
WRITELN('sidebar', outline)
END
/* Write Close tags and close the file */
WRITELN('sidebar', LF LF '</body></HTML>')
x = CLOSE('sidebar')

/* CREATE welcome  and default pages */
x = OPEN('welcome',dirname||'welcome.html','W')
WRITELN('welcome','<HTML><BODY BGCOLOR="#99FF99">' LF LF)
```

Listing

```
WRITELN('welcome','<BR><CENTER><H1> WELCOME!</H1><BR>' LF)
WRITELN('welcome','<h5> Click on a link in the sidebar to
continue... </H5></CENTER>')
WRITELN('welcome', LF  LF '</Body> </HTML>')
x = CLOSE('welcome')
x = OPEN('index',dirname||'index.html',"W")
WRITELN('index', '<html><body>' || LF)
WRITELN('index','<FRAMESET border=0 frameborder=0
framespacing=0 cols=150,1*>' || LF )
WRITELN('index','<FRAME frameborder=YES name=banner
src="sidebar.html">' || LF )
WRITELN('index','<FRAME frameborder=NO name=main
src="welcome.html">' || LF)
WRITELN('index','</FRAMESET>' || LF || '</HTML>')
x = close('index')
EXIT

/* The directory Proceedure  NB: This is defined as a
procedure to protect local variable names.  */
Directory: procedure
/*Define parameter variables: adjust these for your desired
number of columns, rows, and thumbnail width and height */
row = 3 ; col = 4 ; width = 63 ; height = 96
/* string values for tabs and linefeeds */
tab = "09"X ; LF = "0D0A"X
/* Thumbnail filename conventions */
prefix = "tn_" ; suffix = ".jpg"
/* get the actual directory name */
dirname = ARG(1)
/* Remove extranneous spaces etc from the dirname  */
dirname =STRIP(dirname) ; dirname = STRIP(dirname,"b",'"')
dir = dirname
commandline = "list >ram:dirlist "dirname"#?.jpg files
LFORMAT %S"
ADDRESS COMMAND commandline
inname = "ram:dirlist"
name. = "Empty.jpg" ; thumb. = "empty.jpg"
q =  open("infile", inname, "R")
filecount = 0
DO UNTIL EOF("infile")
   filename.filecount = READLN("infile")
   IF ~(UPPER(LEFT(filename.filecount,3))="TN_") THEN
filecount = filecount+1
END
filecount = filecount-1
CLOSE('infile')
/* calculate number of pages */
page = filecount/(row*col)
IF ~(page=trunc(page)) THEN page = trunc(page + 1)
count = 0
DO p = 1 to page
   DO r = 1 to row
        DO c = 1 to col
                IF count < filecount THEN DO
                        name.p.r.c = filename.count
                        translated =
translate(filename.count,'_','.')
                        thumb.p.r.c = "tn_"|| translated
||".jpg"
                END
                count = count +1
        END
   END
END
DO p = 1 to page
   pagename = dir || "page" || p || ".html"
   x = open("current_page",pagename,"W")
   result = WRITELN("current_page",'<html><body><table
border="2">')
   Do r = 1 to row
        WRITELN("current_page","<tr>")
        DO c = 1 to col
                /*build HTML strings for this item */
                item = tab || '<td align="center"><A
HREF="'
                item = item || name.p.r.c || '">'
                source = tab || '<IMG SRC="' ||
thumb.p.r.c || '" border="0" width="'||width
                source = source || '" height="' || height
|| '"><BR>'|| name.p.r.c || '<BR>image<BR></A>'
                WRITELN("current_page",item || LF)
                WRITELN("current_page",source || LF)
                WRITELN("current_page",tab || "</td>" ||
LF )
        END
        WRITELN("current_page","</tr>" || LF)
   END
WRITELN("current_page","</table></body></html>")
x = CLOSE('current_page')
END

/* make banner  */
bannername = dir || "banner.html" ; dirname = dir
/* This cunning  bit of code recursively parses the dirname
variable until it has the last part of the pathname, which
it then uses as the title in the banner of the page    */
do while dirname ~= ""
   Parse VAR dirname name '/' dirname
END
/* more user feedback, also useful for debugging!  */
SAY 'Creating banner file named ' bannername
x = OPEN('banner',bannername,"W")
/* Change the BGCOLORfor a different colour scheme! */
WRITELN('banner','<html><body BGCOLOR="#FF9900">' || LF)
WRITELN('banner','<CENTER><H1>'|| name || '</H1><CENTER>'
|| LF)
/* If there is more than one page, then this is the place
to generate the links to cause remaining pages to be loaded
in the main frame  */
IF page >1 THEN DO
   WRITELN('banner','<H4><CENTER>')
   DO p = 1 TO page
        ref = 'page'||p||'.html'
        WRITELN('banner','<A HREF="'||ref||'"
target="thumbs"> Page' p '</A>   ' LF)
   END
/* Close the Attribute tags, just for neatness */
WRITELN('banner','</CENTER></H4>' || LF)
END
/* Write the closing HTML tags */
WRITELN('banner','</body></html>')
x = CLOSE('banner')
/* make content.html */
contentname = dir || 'content.html'
x = OPEN('content',contentname,"W")
WRITELN('content', '<html><body>' || LF)
WRITELN('content','<FRAMESET border=0 frameborder=0
framespacing=0 rows=87,1*>' || LF )
WRITELN('content','<FRAME frameborder=YES name=banner
src="banner.html">' || LF )
WRITELN('content','<FRAME frameborder=NO name=thumbs
src="page1.html">' || LF)
WRITELN('content','</FRAMESET>' || LF || '</HTML>')
x = close('content')
ADDRESS COMMAND 'delete RAM:dirlist'
/* That's it. As this is a procedure, we should return a
value */
return 1
```

Program Perfection

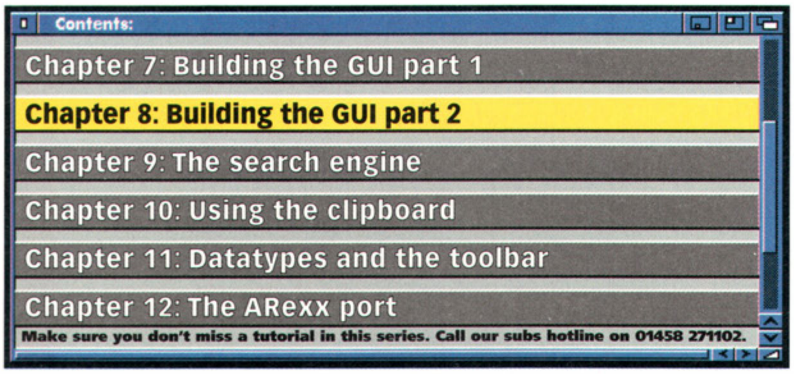
On the CD -In_the_Mag-/Program_Perfection

In our tutorials being lazy and copying off other people's work is quite acceptable, in fact it's required

There is one characteristic that marks a successful software engineer and that is laziness. Actually, that's not strictly true, but knowing when you can re-use others' and your own work can save much time and effort. And time is ever the enemy, especially when you have to write 20 or so pages of a magazine each month. So, in the spirit of laziness (sorry, I mean re-use), I've had a change of plan.

It was my original intention to build a BOOPSI class to take care of the window handling functions necessary for our project and yet another for ARexx functions. But since we now have a new operating system update with these built in, it would be a huge waste of my and your time to re-invent the wheel. Yes, folks, this is probably the first programming tutorial to take advantage of some of the new features of AmigaOS3.5.

For clarity, we've added the ¶ sign in the listings to show where you need to enter a Return.



A TOUCH OF CLASS

In case you have been ignoring every other column in *Amiga Format* except this one, you'll need to know that the new release of AmigaOS incorporates the ClassAct GUI system, now relabeled as Reaction. This is no cause for alarm, however, because Reaction is simply a set of BOOPSI classes, gadgets and images to augment the existing ones of AmigaOS3.0. Unlike other add-on GUI builders, Reaction doesn't require you to think in different ways or to learn a whole new system. It just makes life easier. Well, mostly.

As mentioned above, Reaction adds window and ARexx classes which enable the programmer to think about these operating system components in an object-oriented way. Reason enough for using it, then. But it also includes a class of gadget called the layout gadget which combats one of the problems of creating GUIs on the Amiga since time immemorial: adapting an interface to font and window size.

The layout gadget does nothing useful by itself. What it does do is allow the contents of a window to be specified without worrying too much about the position and size of each individual element. A window's contents are specified as a tree, a hierarchy of gadget groups. Each node of the tree divides the window area into smaller vertical or horizontal sub-areas. Each leaf of the tree is a gadget. This sounds complex, but in fact is dead simple. See the Example Layout diagram if you don't believe me.

AmigaOS3.5 incorporates the ClassAct GUI system, now relabelled as Reaction, so we won't need to build our BOOPSI class any more

CLOSE TO THE EDGE

The ClassAct window class does have a few shortcomings, however. For example, the system for laying-out the contents of a window is fine and dandy as far as it goes, but it makes no provision for adding gadgets to the borders of a window. And we do want scroll gadgets in the borders of our main window to allow the user to navigate through the displayed text in a familiar manner. So, what's the solution?

The new release of ClassAct in its Reaction guise does make provision for the adding of scroll gadgets to a window's border. You simply specify the attributes WINDOW_VertProp and WINDOW_HorizProp as TRUE when you create the window object. Unfortunately, these are not the standard scrollers that you see in other windows in AmigaOS, but instead use the ClassAct imagery. These will work satisfactorily, but they look just plain odd. We want standard-looking scroll gadgets, such as those created by our custom scroller class (which we'll now rename as AFScroller to avoid confusion) that we talked about last time. The problem, then, is how to attach them to a window.

When you create an object of window class with Reaction, you may only specify the contents of that window and only with an object of the layout gadget class – which is no good for putting gadgets in the window border. However, once the Intuition window corresponding to the window object has been opened, we are then free to attach gadgets to the window border with the normal Intuition `AddGadget()` or `AddGList()` calls. Now, windows with scroll gadgets are such a frequently used feature, it would make sense to package this up as a class that we can easily re-use. How do we go about it?

Here we shall be sneaky and create a new window class which inherits from the Reaction one and which we shall call AFWindow. It will override the Reaction window class's OM_NEW and OM_DISPOSE methods to create and destroy two AFScroller gadgets along with the parent window object. Also, it will override the Reaction WM_OPEN method (which tells the window class to open the actual Intuition window) to attach the scroll gadgets after the window has been opened and, similarly, override WM_CLOSE to remove the scroll gadgets before the window is closed. AFWindow will neatly hide all the messy details of making a window's scroll gadgets from its clients, but clients will still need access to the scroller objects so that they can manipulate them and interconnect them to other gadgets. This is provided by the read-only attributes WINDOW_VertProp and WINDOW_HorizProp, usurped from ClassAct's ugly scrollers.

BUILDING MATERIALS

Some of the code provided on this issue's coverdisc requires either the ClassAct developer kit or the OS3.5 developer kit for compilation. The latter is available on the new Amiga Developer CD, which should be available by the time you read this. Since I haven't actually seen a copy of this CD yet, the code may need some minor tweaking to work with it.

THE BIG EVENT

Another problem with the ClassAct window class is its event handling. Since ClassAct windows are ordinary Intuition windows and their gadgets ordinary BOOPSI gadgets, they sent IDCMP messages to a message port as per normal. However, the window class itself expects to get first dibs on any messages sent. Your event loop should invoke the window's WM_HANDLEINPUT method when you get signalled that a message has arrived at its port. The window will then do its processing in response to whatever event caused the message and then pass it back to you for further handling. For example your event loop could look something like:

```
while( !quit ) { got_sigs = Wait( window_sig |
any_other_sigs );¶
if( got_sigs & window_sig ) { while(( result !=
DoMethod( wobj, WM_HANDLEINPUT, &code )) !=
WMHI_LASTMSG )¶
switch( result & WMHI_CLASSMASK ) { case
WMHI_CLOSEWINDOW: /* respond to close event */
break;¶
case WMHI_GADGETUP: /* respond to gadgetup event
*/ break;¶
/* respond to other events... */ } } /* respond to
other signals... */ }¶
```

This is fine except when we have multiple windows sharing a single message port. ClassAct does not provide a way for determining which window was the source of the message. The documentation recommends that when signalled you should invoke the WM_HANDLEINPUT method on all windows that share the port. This is rather inelegant and, in fact, the event loop should not have to know how many windows are open.

The IDCMP messages that Intuition send to a window's message port are tagged to identify the originating window. The problem is, in this case, that we cannot get messages from this port ourselves, because the window class expects to do this itself. The trick is that when we are signalled that a message has arrived, we snoop at the first message in the port without removing it and determine the Intuition window that caused the message.

The next problem is that now we know the Intuition window, how do we locate the corresponding window object? This takes some cunning, too. The Intuition window structure provides a place for storing application-specific data for each window, the UserData pointer. We can make use of this to store a pointer to the corresponding window object. This is performed by the overridden WM_OPEN method in our AFWindow class.

We will have to modify the behaviour of the event handling module discussed in chapter three to account of these changes, but an example event handling loop might look something like:

```
while( !quit ) { got_signals =
Wait( window_sig |
any_other_sigs );¶
if(got_signals & window_sig ) {
/* We got a window message */
struct IntuiMessage *msg;¶
while( msg = SnoopMsg(
window_port ) ) { /* find the
window object */ Object *win_obj
= msg->IDCMPWindow->UserData;¶
/* do default window handling */
result = DoMethod( win_obj,
WM_HANDLEINPUT );¶
/* respond to result... */ } }¶
/* respond to other signals...
*/ }¶
```

IN THE MAIN

The handling of the main window in AFMore will be packaged up into a BOOPSI class with our new AFWindow as superclass. This TVWindow class will take care of the contents of the main window, which is the TextView Gadget we talked about last month and, later on, a strip of tool buttons. Layout of these gadgets is done by a layout gadget.

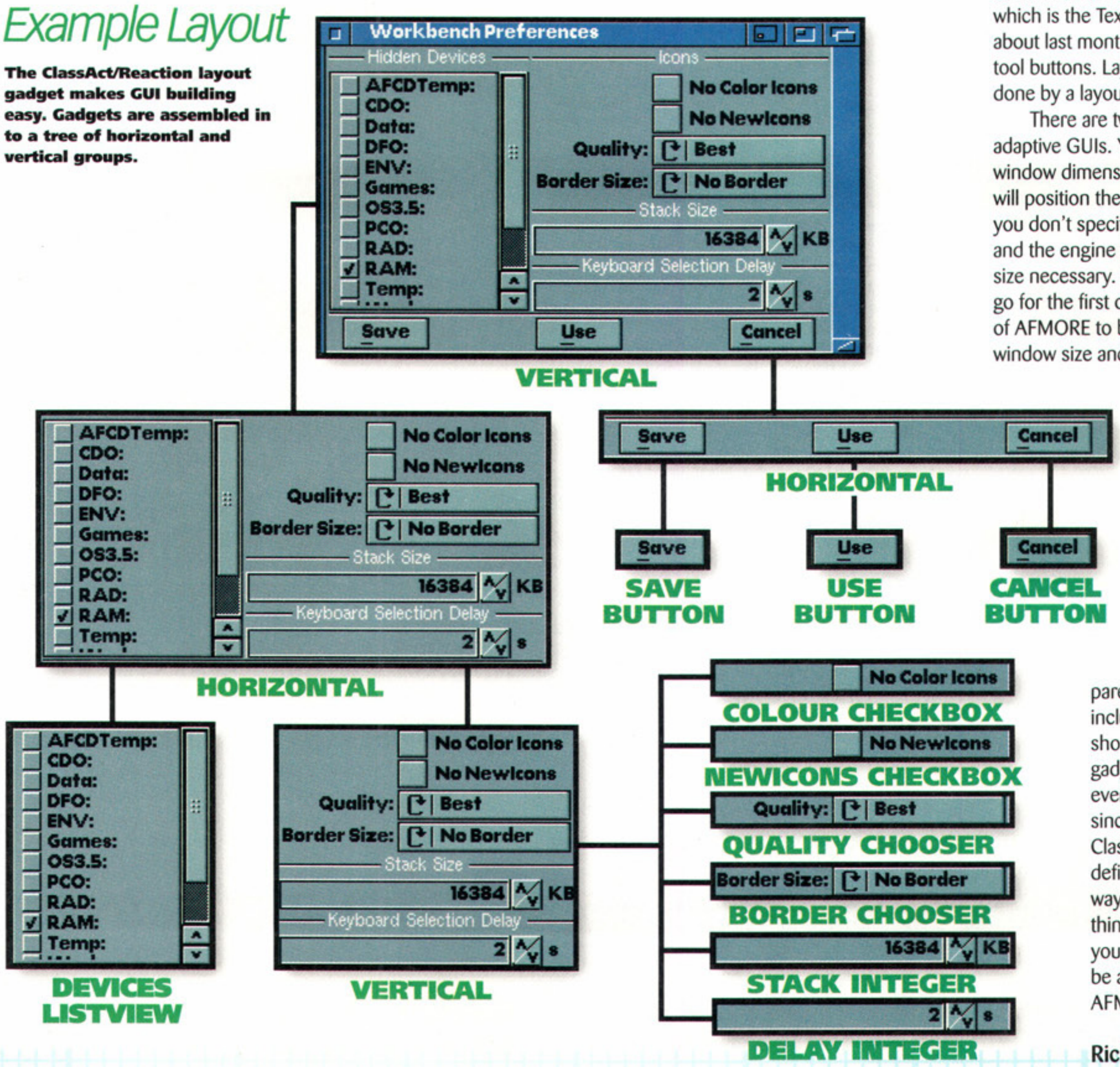
There are two approaches to size-adaptive GUIs. You either specify the window dimensions and the layout engine will position the gadgets to fill this size; or you don't specify the window dimensions, and the engine will calculate the window size necessary. For our main window, we'll go for the first option, since we want users of AFMORE to be able to specify the window size and position as start-up parameters to the program. The main TextView gadget will be adapted in size to fit whatever the current window size is.

The TVWindow class will also handle any additional processing in response to window events not already taken care of by its parent window class. This will include these like keyboard shortcuts for our custom gadgets, responding to menu events and so on. However, since I'm still a bit of newbie to ClassAct, I haven't reached a definite conclusion on the best way to go about this. I'll put my thinking cap on and get back to you next time - when we'll also be adding a search function to AFMore . . .

Richard Drummond

Example Layout

The ClassAct/Reaction layout gadget makes GUI building easy. Gadgets are assembled in to a tree of horizontal and vertical groups.



Synth Studies

On the CD
-In_the_Mag-/Synth_Studies

It's an audio smorgasbord this issue with a tasty array of sonic sandwiches, musical munchies and a fortunate absence of strange sausage-type things

As this is the final part of my tutorial, I'll take this opportunity to highlight a few of the fun bits and pieces of audio software I've come across and also to update you on a few recent developments in more serious areas.

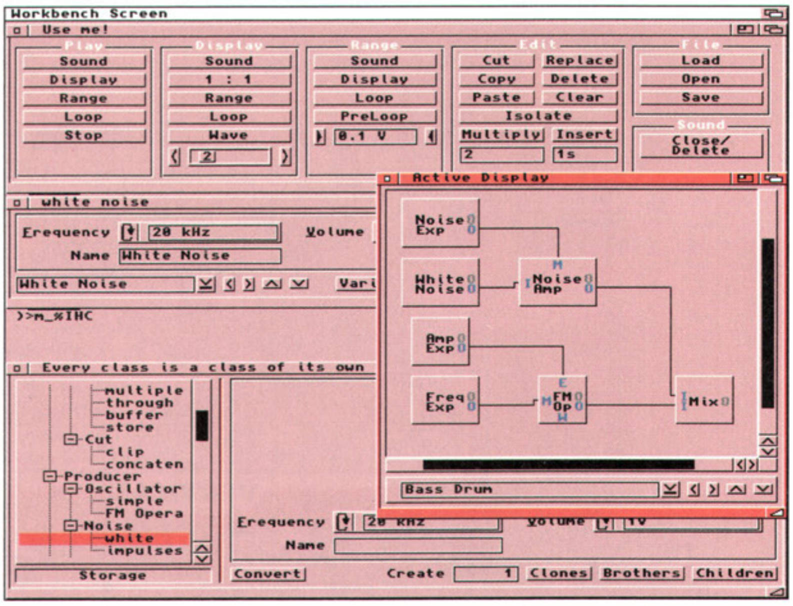
First let's start with the lighter side of things. *Scope XT4* is a neat little gizmo that doesn't have any particular practical use but is good fun all the same. It's a spectrum analyser that responds to input from a parallel port sampler. You get an animated waveform display on the top half of the screen and a frequency graph below. Flicking the F2-key switches the display to a vertically scrolling 'spectrogram', an alternative visual representation of the sound. Various parameters can be altered using the keys listed on the right of the display.

There are some neat little gizmos out there that just might come in handy if you ever decide to make a film with a voice recognition entry phone in it

It's fun to put it on when you're listening to music, but as the quality of the sound passed through to the Amiga audio outputs isn't that good, it works best if you can feed it from a secondary output from your amp or mixer. If you ever happen to be making your own film which involves a scene requiring some kind of high-tech voice recognition entry phone, this would make an ideal prop. Well, you never know when it might come in handy!

Contents:

Make sure you don't miss a tutorial in this series. Call our subs hotline on 01458 271102.



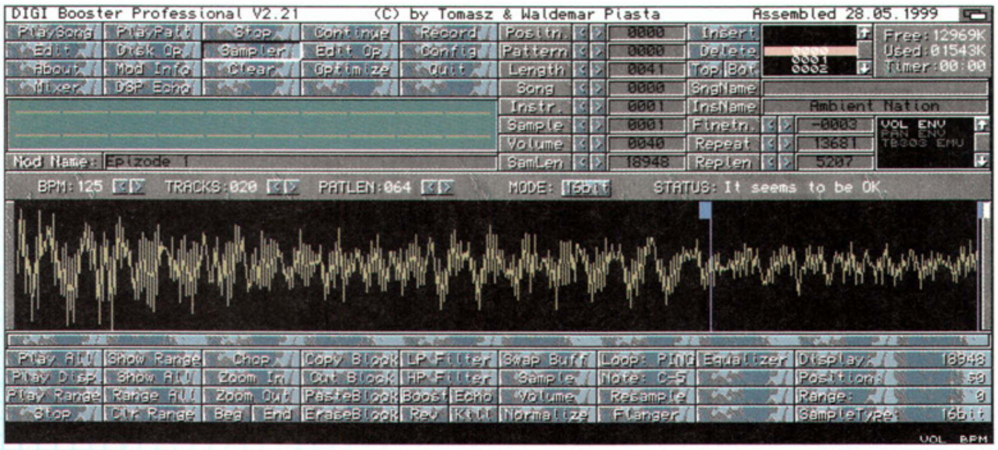
See, Assampler is quite simple really: the bandifold oscillator is directed through the multiple impulse controlled filters, which is then amplified exponentially by a factor defined in the frequency buffer region. Probably.

REAL-TIME EFFECTS

Using an old Amiga as real-time effects processor is one way to increase your audio options and employ a previously retired old A500. Most sample editors offer some degree of real-time effects processing, but in many cases it's easier and more practical to use a more compact tool for the job, especially if your second Amiga doesn't have a hard drive and is limited to a 68000 processor with 1MB of RAM. This is when things like *TREG* (The Realtime Effects Generator) and *DVerb* come into their own. While their effects aren't up to studio quality (they both sample and playback in 8-bit), they can be made to sound pretty good, especially if you filter off the high frequencies that tend to blight their output. You can put them on a self-booting disk and they'll happily do their stuff with the bare minimum of system resources.

A DECENT VOCODER!

The vocoder effect is definitely the sound of the moment. A vocoder works by filtering

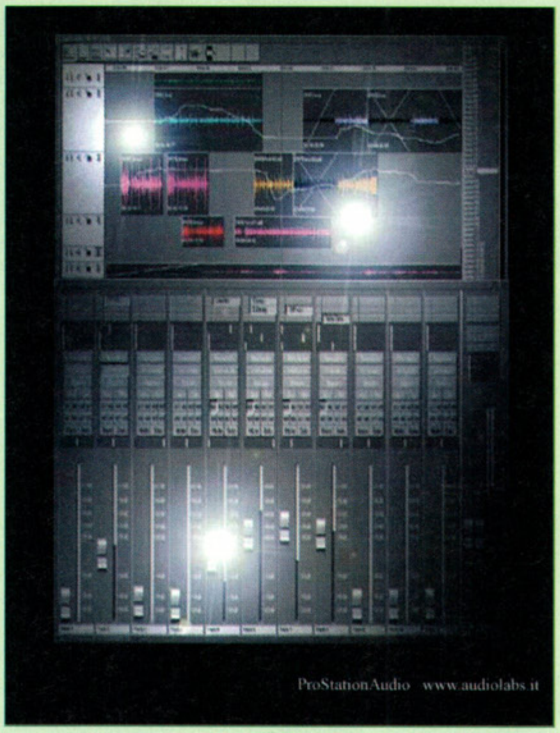


The latest release of DIGIBooster comes with plenty of tempting features, including excellent MPEG audio capabilities, a built-in TB 303 soft synth and retargetable output via AHI.

PROSTATION AUDIO

For those with more demanding digital audio projects in mind there's *ProStation Audio*. This is a non-linear audio editing and DSP package aimed at the professional user and very nice it looks too with its virtual mixing desk and multi-coloured waveform displays. You'll need a very good Amiga to make the most of it since it really likes at least 64MB RAM, a PPC, 16-bit sound card, fast hard disks and a graphics card. You can run it on a 16MB AGA A1200 but I wouldn't recommend it.

It's a big package and one that I can't claim to have done anything much with it yet, so I think it's best if I leave you to make up your own minds for now with the demo on the CD.



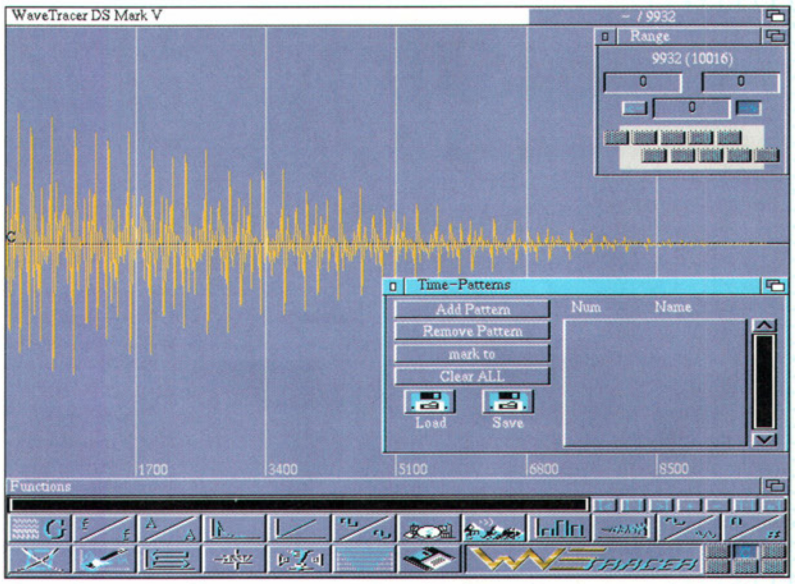
This is the first audio package to be aimed at the professional sector for years. The emphasis is more on audio than music and it looks like it would make a great companion to a VideoToaster or VLab Motion system.

one sound with the frequencies that are present in another. This lends the characteristics and 'tune' of the second sound to the first and is most often used to make vocals sound as if they're being sung by a synthesiser. *SoundProbell* has its own vocoder options, but it can be quite a task to get useable results from it – often it fails to find enough common frequencies in the two sounds and ends up filtering almost everything out.

However, there's a new vocoder tool called *Zerius Vocoder* which in my experience does a much better job. It's a port of a UNIX tool and has no GUI, so it must be used from the Shell. This isn't a problem, as the usage is very simple. For example:

```
vocoder ram:vocal.wav
ram:synth.wav ram:result.wav¶
```

This would take a WAV file in RAM: called "`vocal.wav`", process it with another called "`synth.wav`", and write the resulting sample to a file called "`result.wav`". There are other options you can use to alter the



The sonic potential of WaveTracer seems boundless but, unless you can understand German, it might take some time to get the hang of it.

sound, but this is sufficient in most cases. Be prepared to wait a while as it's quite slow at the moment, although faster optimised updates should appear in future. If you've got a PPC card you can take advantage of the PPC version, which of course is faster than the 680x0 versions.

This is an excellent tool if you want to add some originality to your tunes. For example, you can take a chord sound and vocode it with a drum loop, which has the effect of transposing the rhythmic nature of the drums onto the chord sounds. Alternatively, take two drum loops (or melodies) which have been adjusted to run at the same pitch and then vocode them together. Better results are attained when using sounds which contain plenty of different frequencies.

DIGIBOOSTER PRO

You may remember I reviewed *DIGIBooster Professional* (or at least that's what I was told it was) in *AF122*. The review version of the tracker was unimpressive to say the least, especially since it was without many of the touted features. However, those features are included in the demo version on this issue's CD. You get a TB-303 emulator (adapted from 303Tracker), *AHI* output, MP1, 2 and 3 importing, saving of mods with samples stored as MP3s, *CybergraphX* and *Picasso96* support, independent channel effects and more.

> *If you can get it to play ball and you get on with its interface, DIGIBooster will be the most powerful sample-based tracker you've ever used*

DIGIBooster isn't the most system-friendly piece of software, and seemed intent on making sounds like a flatulent elephant whenever I tried it, but maybe it'll play ball with you. If it does and you get on with its interface, you'll probably find it's the most powerful sample-based tracker there is.

ASSAMPLER

Here's something for anyone with a lot of time on their hands. *Assampler* is... well... to be honest I'm not quite sure. It's amazing how often developers go to all the trouble of writing some software, making nice AmigaGuide documentation for their programs, and then neglect to include just a couple of lines to tell us what the thing actually does!

So far I've figured out that it's a soft synth (see *AF127* for more on that subject), but it also appears to be a sample processor. It has its own unique way of working, revolving around a floating-window MUI display, and because of the amount of windows you need to have open at once, a graphics card or Multiscan Productivity AGA screen mode is virtually essential (and hence a monitor capable of displaying them – unless you fancy squinting at a High Res Interlaced screen). One window constantly bears the perplexing legend "Every class is a class of its own," which quite frankly is no help at all in fathoming the depths of this system but does a good job of reminding us what a strange program it is. The demo projects are enough to convince me that it is worth sticking with it, but I'd advise you to get yourself a nice big mug of coffee and make yourself comfy before diving into it for the first time.

WAVETRACER

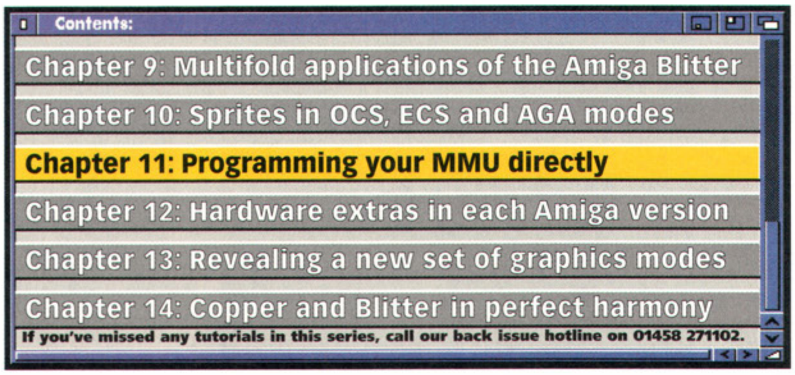
Here's another one that looks like it's probably quite powerful and flexible but so far remains something of a mystery to me; mainly because the documentation is in German and a lot of the functions are invoked with graphic icons rather than buttons labelled with text. Once you've seen one icon with a zig-zag line on it, you've seen them all. It's a soft synth among other things, and you can find it on the CD with the rest of the software mentioned in these pages.

Tony Horgan

Banging the Metal

-In_the_Mag-/Banging_The_Metal

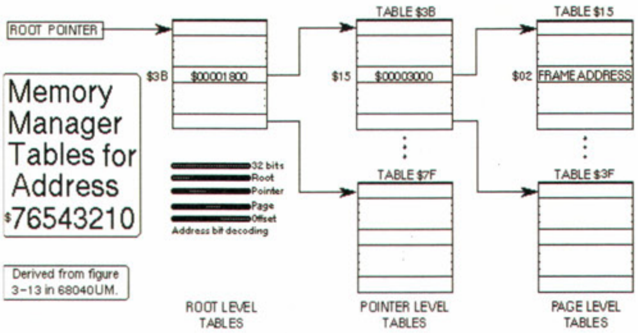
Motorola's Memory Management gets definitive DIY tickling



Memory Management hardware implements 'address translation'. It divides all your memory space into small areas, known as 'pages', and keeps tables that relate the 'logical addresses' used in programs to 'physical addresses' of hardware. This level of indirection was intended for virtual memory, but that's never wise on a real-time system, as *GigaMem* and *VMM* victims confirm. Virtual memory can be managed within Amiga applications, but there was no safe, portable way to code it, until now.

Meanwhile real, non-virtual RAM is inexpensive, and Amiga programmers have found much more imaginative uses for the MMU (Memory Management Unit). Certain addresses can be protected against accidental changes, or monitored for diagnostic purposes. ROM can be copied to RAM, without software noticing any difference except extra speed. Memory can be simulated where old programs expect it, like the A500 trapdoor $C00000 area. Fast and Chip RAM can be swapped around the memory map, for top speed and compatibility.

CBSpeccy and *AXF-64* use MMU paging to emulate eight-bit hardware bank switching, hundreds of times faster than pure software. *ShapeShifter*, *Savage*, *FastECS*, *EVD* and *Fusion* drivers give faster Mac displays because the MMU monitors changes, so they need only redraw modified parts of the picture. Amiga programmers rate MMUs highly.



The MMU hardware scans tables three-deep in main memory.

> **One of the many advantages of MMUs are that they allow Fast and Chip RAM to be swapped around the memory map for top speed**

MMU PRINCIPLES

Address translation works by splitting each 32-bit 'logical address' used by a program into four sets of bits, and using those sets to index into a group of tables. The contents of the tables modify the physical address which is eventually accessed. The most recently-accessed table entries are held in a dedicated cache inside the MMU, so it's rare for the processor to have to fetch an extra long word – let alone all three table entries – to find the required data.

The number of bits in each set depends on the particular MMU configuration, and eventual page size. This overview assumes 4K 68040 pages. The Motorola manuals that can be retrieved from their website, http://www.mot.com/SPS/HPESD/aesop/680X0/, give details of each MMU, and Aminet's util/libs/mmulib.lha makes them work consistently.

If each page is 4K long, the 12 least significant bits are the same in the logical and physical address. These give the offset within a 4K page. The other 20 bits are translated by looking them up in the MMU tables, so each 4K page can appear in any of a million places – possibly in more than one at a time. Each table contributes six or seven bits to the program's 'logical' – as opposed to 'physical' – wired address.

CHURNING TABLES

Translation tables are split into three levels to save space – a single table of four bytes for each 4K would need 4MB to account for the entire 32-bit space. The three layers mean that large areas can be skipped, sharing default lower-level tables, if the address space is unused. The table approach means you can map the first 16 MB in under 20K, using just one root,16K for valid pages, and a little more for unused pointer and page tables to fill gaps.

The root pointer registers indicate the start of a 'Root Table' of 128 long words – one for each 32MB of address space. This table must be on an even 512-byte boundary as the last nine bits of each pointer are assumed to be zero. Each root table entry in turn points at a 512-byte 'Pointer Table', similarly aligned. Each of these 'pointers' manages 256K in a similar way; 256K x 128 x 128 = 4GB, the total 32-bit address space. This leaves the third layer, the 'Page Tables', with one entry for each of 64 pages of 4K.

The top 20 bits of this long word contain the logical address where the processor will see that page. The 12 lowest-order bits are replaced with the offset within the page from the logical address, so their translating table entries contain useful page-specific information, potentially marking it valid, cacheable for reads or writes, Supervisor or Write-protected. One bit is set when a page is modified – smart refresh schemes use these bits to determine their workload at each screen update.

Separate root pointers, SRP and URP, point at Supervisor and User-mode translation tables. This split suits monolithic kernels like UNIX, where every task has a private User space, mapped from zero, with its own translation tables, swapped by the scheduler. Meanwhile, the system kernel uses a flat memory model that can access all pages. AmigaOS rarely uses Supervisor mode, but mmu.library supports separate tables for tasks and modes. Commodore had one set for everything, if any MMU setup at all.

MMU PROBLEMS

If a program jumps wildly around the address space it will often ask for pages that are not in the ATU cache, causing delays as the tables are searched. A 68040 can keep track of 256K, before 'ATU churn' starts to slow things down. In rare cases this makes an old 68040.library, such as v37.10 which ignores the MMU, a bit faster, though less reliable for want of MMU cache control.

Zorro boards that use Direct Memory Access – typically fast SCSI cards – may confuse the system unless they take account of the MMU. If in doubt, avoid

DMA to remapped memory. Load it elsewhere and copy it with the CPU, thus automatically translating addresses.

Commodore's A4091, A3000 and A4000T SCSI work properly, but many others need 'patches'. OmniSCSI patch corrects the 'Guru ROM' for GVP boards and Commodore's A2091 and A590 SCSI controllers. It fixes logical to physical translation so the software flushes the right cache pages after DMA.

THE MISSING INTERFACE

Memory Management came late to the Amiga, and has only been fully tamed for a few months. Few Commodore systems incorporated memory management hardware, and fewer still used it – even the majority of A4000/040 systems shipped with a version of *SetPatch* that ignored the feature. But nowadays all but the cheapest accelerators provide a Memory Management Unit as a matter of course.

Unlike typical 32-bit operating systems, AmigaOS does not need an MMU to work, but top-of-the-range machines had one anyway. A3000s and A4000/040s were aimed at developers; Mike Sinz harnessed their MMUs to help make programs a lot more reliable.

Mike wrote *Enforcer*, a tool which implements 'memory protection', using the MMU to check and report program faults. Initially available from CATS, Commodore's developer support group, *Enforcer* is now on Aminet, but obsolescent. It barely works on modern European accelerators, prompting phase 5 to bundle their clone, *CyberGuard*.

Meanwhile system programmers had hacked up custom MMU utilities for a host of purposes, including *SpeedyChip*, to boost 68060 Chip RAM speed, *SoftBoot* (for 030/040), *Set040*, *Mapboard* (040 only), *CPUcontrol* (020/030) and my own *QuickROM* for 68040 and 68060 systems.

These are all limited to certain types of MMU hardware, for want of guidelines on MMU programming, or a consistent software interface. There was really no alternative to Banging the Metal, with all the attendant problems of testing and compatibility. Many wheels were reinvented, some rounder than others.

The 68020 required an optional extra chip, the 68581, for memory management. The 68030 appeared in versions with and without similar hardware, so the A3000 had a compatible MMU but the A4000/030 did not, relying on the cheaper 68EC030 chip. The 68040 MMU was radically trimmed and re-designed to cope with bigger, faster caches, then tweaked again for the 68060.

Not just the functions, but the raw instruction codes to set up and test the MMU changed between 68030 and 68040, so there's no chance of the same code working on both. 68030 MMU code makes later processors Guru, and vice versa.

NEW LIBRARIES

Borge Nost's enforcement.library attempted to smooth over the cracks in Amiga memory management, but relied on a ready-made MMU setup, inherited from *Enforcer*. This dependence put it at the mercy of changes in other programs. WarpUp eases MMU control for PPC coders, but clashes with PowerUp and can't help 68K developers. The key to reliable MMU programming arrived less than a year ago, with the beta versions of Thomas Richter's ground-breaking mmu.library.

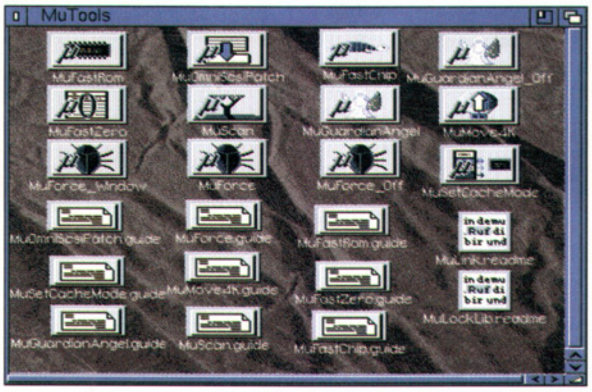
I introduced Thor's library in last month's feature on Amiga stability. It can just as well extend the system significantly. It comes with icons that work like the best MMU hacks, but run on any suitably-equipped system. Most importantly, it provides a freely-distributable, well-documented and consistent way to program any Amiga MMU, from 68581 to 68060, in BASIC, C, assembler or anything in between.

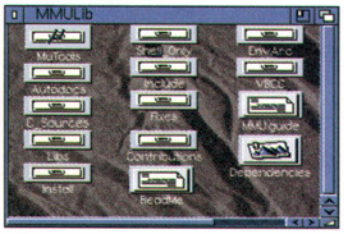
The table lists the main programs in the MuTools drawer on *AFCD48*. You also get debug and diagnostic tools, example source, support for the free VBCC compiler, and excellent documentation. Other goodies include generic 68040 and 68060 support libraries, and a collection of patches and fixes for AmigaOS bugs.

WORKBENCH-FRIENDLY MUTOOLS

PROGRAM	REPLACES	ACTION
FixCybAccess	Unrivalled	Fix phase 5 CybSCSI bug
MuFastChip	SpeedyChip	Decouple Chip RAM updates
MuFastROM	QuickROM Set040 FastROM	Boost Kickstart speed
MuFastZero	FastExec	Divert system to fast RAM
MuForce	Enforcer CyberGuard	Protect memory accesses
MuGuardianAngel	Unrivalled	Trap memory usage errors
MuLink	Unrivalled	Protect from self-modifying
MuMove4K	PrepareEmul RsrvWarm/Cold	Make room for Mac emulation
MuScan	MMUlist	Analyse the MMU set-up
MuSetCacheMode	Mapboard SetCacheMode	Configure access to boards
OmniSCSIpatch	Guru ROM update	Enlightens SCSI DMA control

The mmu.library comes with a host of Workbench-friendly tools.





Thomas Richter's fine MMU programming kit is on AFCD48.

EXAMPLES

QuickROM.asm is an annotated example of metal-bashing MMU programming. This freshly obsolete Aminet favourite shows how to find, decode and modify standard 68040 and 68060 MMU tables.

De-restricted commands toggle write-protection of a remapped Kickstart, allowing direct patches of 'ROM'. That suits serious hacking, like diverting DISABLE macros to tune your Amiga's response to fast interrupts.

Small routines on *AFCD48* demonstrate ATU churn, and expose the special address translation registers. You can run these from a CPU monitor like *COP*, *MonAm* or *Barfly*, but be wary – they're hardly general. These days it's a lot safer, easier and more flexible to use mmu.library.

The table shows how mmu.library replaces a dozen processor-specific hacks with generic tools. Given safe DMA, this is the only way virtual memory can be guaranteed stable on an Amiga. New applications must be specifically written for mmu.library – no patch can save the existing hacks.

We could now run virtual 68K systems on our Amigas, with full speed emulation on the same processor in real 'protected' modes on any computer with an MMU. A shareware hack for PCs does this for Linux and Windows. With relatively little effort we might run Palm Pilot, Sega Genesis, Atari ST, NetBSD, Linux, Qdos or Amiga UAE alongside AmigaOS, at comparable speed – without the need to re-interpret code.

The MMU library can juggle several 32-bit 68K 'systems' with wildly varying memory models at once, with protection so crashes in one don't affect the others. Until now only Mac emulations attempted this, lacking protection, and requiring AmigaOS to be clipped to suit. Thor's library banishes extra resets for MacOS. Amiga memories need never look the same twice, thanks to mmu.library, or WarpOS for PPCs.

THE NEXT INSTALMENT

So far we've focused on core hardware common to most Amigas. Next month we explore the extra metal that makes each model unique, probing real-time clocks, scaling video slots and SCSI towers, crossing bridge boards and docking with IDE. Whether your Buster is busted, or you don't know Gary from Gayle, stay tuned for the next exposé, banging beyond the six big chips.

Simon Goodwin



MailBag



Send your letters to: Letters To The Editor • Amiga Format • 30 Monmouth Street • Bath • Somerset • BA1 2BW or email: amformat@futurenet.co.uk – putting 'Mailbag' in the subject line.

SEND US	SPARE US
Feedback on the tutorials	Long, looong letters with numerous points Keep it concise!
Your homebuilt Amiga projects	Emails that don't make any sense
News about Amigas in use in the real world	Illegible handwriting
Views about the mag	Questions asking why Amiga haven't brought out the MCC yet
Ideas for future issues	Technical questions which should be addressed to Workbench
General questions you want answered (not technical ones!)	

BAD WEBSITE! NAUGHTY WEBSITE!

It is with some note of irony that I managed to find out why I couldn't connect to the *Amiga Format* website, namely that I had run into a Microsoft VBScript runtime error. Now, not knowing all that much about the internal (infernal?) workings of pretty much everything that Microsoft has to offer I would like to know how to view *AF*'s website without having to use a PC browser to do it. Other than the problem with the website, I have to say that the rest of your efforts are well appreciated by me, and I'm going to say a big thank you for the quality of your hardware reviews. The review on the Power Computing Power CD-ROM was absolutely spot on the money, which I found out for myself soon after installing it.

Douglas & Jennie Jackson
dandj@alphalink.com.au

I have just tried to browse your website, only to find that I am redirected to the Future Publishing front page (I have just upgraded my browser to *Voyager3* but at present am unable to get it working, so don't give me that upgrade or die nonsense), and was somewhat disappointed to find that it requires JavaScript; a feature that has only just become available on Amiga browsers and can by no means be considered common place. A separate non-JS site would be a lot more use for those of us trying to catch-up.

Shawn Marston
amiga@marston.enterprise-plc.com



If you want a taste of what's to come in AF use V3 to check out our website.

Yes, part of the problem is the fact that because the people in charge of Amiga Format's website here at Future have plenty of others to look after, they use one tool to do the lot. It just so happens that that tool is Microsoft's horrible FrontPage. Basically it should work with any browser that's Internet Exploder or Nutscrape. Fortunately, that also means any browser that can pretend it's either of those two browsers, and that includes the Voyager3 that you want to get going. However, this really is a Workbench question rather than a statement of your opinion, so take it there next time, okay?

PLUG TIME AGAIN

Hi Ben! I was hoping you wouldn't mind if I used some of this space to advertise a new mailing list for 'needy' members of the Amiga Community.

Over the last month, I have been busy contacting all Amiga User Groups around the globe (getting the list from Cucug/user groups) and spending untold hours on IRC searching for the world's most talented, knowledgeable, experienced and enthusiastic Amigans to add to a mailing list.

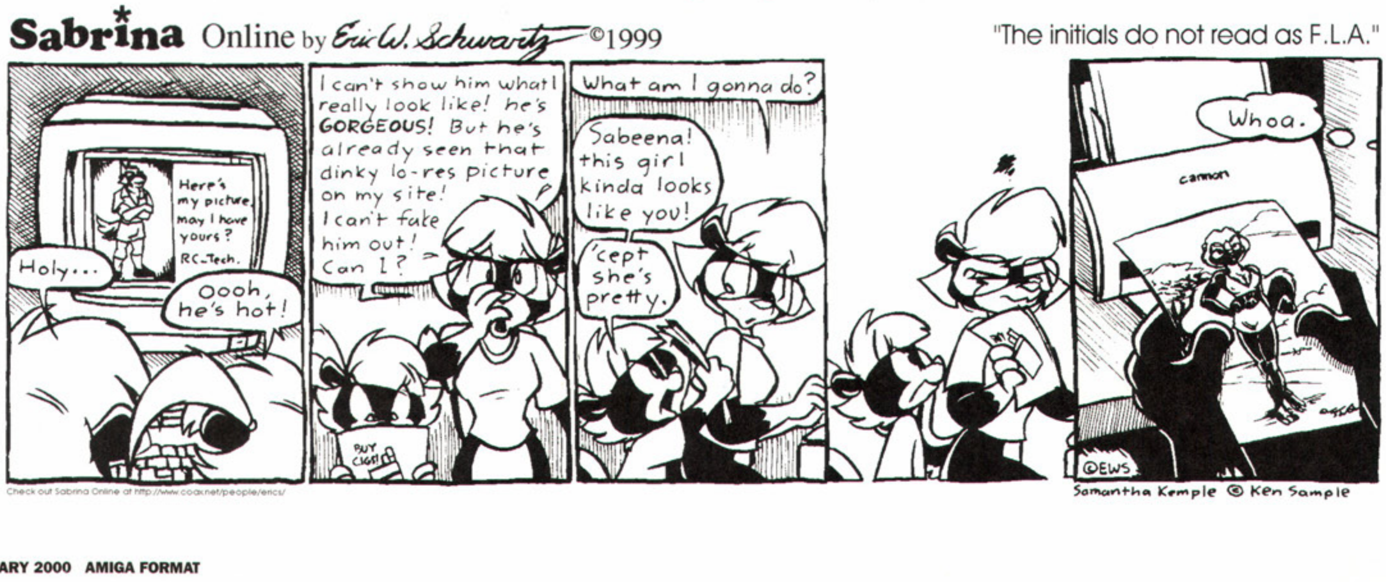
The point of this mailing list is to answer the questions and queries of the Amiga Community. I know that there are several other similar groups, but I don't believe there is one that offers such a vast range of experience from around the world all huddled together in one place.

You (the reader) – and you too Ben if you wish to do so ;-) – can contact them on: AmigaSupportService@Onelist.com.

Please do not post 'chatty' messages to this list as many of the user group presidents have expressed great concern over this as their mail box already has enough stuff in it. They are willing to help with whatever they can however and that is what they intend to do.

Thanks for your time and space.

Hugo Wilkinson
hugo@inbbs.fsnet.co.uk



Check out Sabrina Online at http://www.coax.net/people/erics/

EMAIL VICTIM

Are you fed up of getting loads of spam? Don't bother replying to get your name off their mailing list. It's a waste of time and only serves to verify that you got their email.

There is an easy way out though. Change your ISP. Or get your current ISP to allocate you a new email address and not have any mail forwarded from your old address. Then, for a week or two, use both addresses while you notify all your email contacts of your new address. Then ask your ISP to close down your old address. That way spammers will lose contact with you and you will be spam free until more get a hold of your address. Since changing ISP's I have been spam free for two months now. Bliss! Regards.

Jim Buckley

Well, we would have printed your email address with your letter, but it seemed pointless since you've probably got a new one now and no-one will be able to get hold of you at your old one. You're right, of course. Replying to spam email is one of the worst things you can do. The best thing is to completely ignore it, or if you want to take action, send it to what appears to be the host address (the bit after the @) addressed to abuse or postmaster. However, don't be surprised if this doesn't help much. Other than that, just ignore it in the same way you ignore junk (snail) mail, or the leaflets that always fall out of magazines.

SEX SELLS MAGS

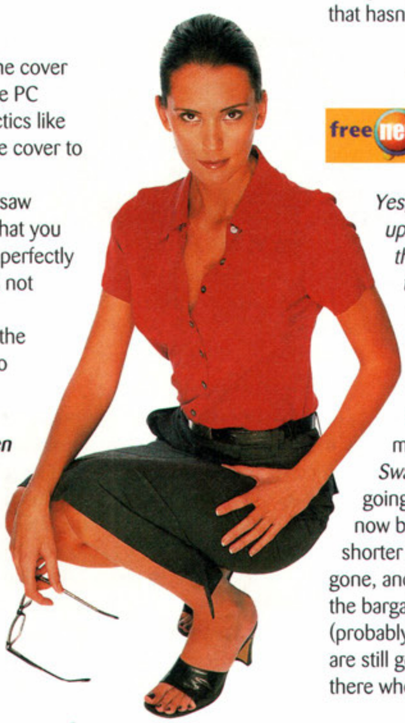
It always amuses me when I see the cover of *PC Format.* "Ha!" I think. "Those PC writers have to resort to cheap tactics like putting a half-naked woman on the cover to sell their magazines. Ha!"

So the first thing I felt when I saw *AF130* was disappointment. Not that you had a woman on the cover, that's perfectly normal, but because her shirt was not fully buttoned at the top!

Surely you don't have to use the sneaky underhand tactics of sex to sell your magazine? You're a lot more respectable than that.

David Thomsen
Lazlo81@yahoo.com

I have to say I personally agree with you. Covers like that can be easy crutches (no pun intended) for weak imaginations. Future has found, on the other hand, that putting semi-naked females on the cover of their magazines tends to make those issues sell more than otherwise. I guess it's not too surprising considering the target audience for most Future mags, but still.



Pretty? Yes, but relevant to the Amiga? Perhaps not.

MORE ISP PLUGS

Hi, I have just come across a really good ISP, I must admit I chickened out and used the family PC to signup, but when I heard what they were offering I just couldn't wait (I guess I could have connected with my 1200, but it would have taken twice as long). Just pop along to www.freenetname.co.uk they give you 20MB of web space plus your own domain name for free. Mine's www.HurlingUK.co.uk they also give you unlimited email addresses, which end with your address, like the one I used. If that hasn't convinced you what will?

Darren Dignam
DarrenDignam@HurlingUK.co.uk

Yes, you can use your Amiga to sign up to these folks, but be warned, they say that they reserve the right to plaster ads all over your site in the future…

HOORAY FOR 3.5!

Who else likes OS3.5? I do. Sure, it doesn't let *ARQ* run any more, and other things like *SwazInfo* no longer work, but that was going to happen. The point is, I can now boot up Workbench in a much shorter time, with all those old hacks gone, and the whole lot is more stable into the bargain. Sure the MCC is gone (probably), but at least the classic systems are still going, and the more of you out there who fork out the £35 or so, the more likely we'll get further effort by Petro's Amiga.

By the way, as a suggestion for *AF*, would it be possible to do a tutorial on the new installer? Then we could use the OS3.5 version to its fullest, and make our home brewed efforts look that bit more professional.

Keep up the good work.

Sandy Brownlee
sandy@brownlee99.freeserve.co.uk



OS3.5 is a fact of life, it just helps that it's actually pretty good as well.

HOORAY FOR 3.5?

Hello *AF.* I have seen the new look of OS3.5 and I really liked it but I think that, although the GUI has made it very cool in some parts, in others it has made it seem very old.

In my opinion some parts of the gadgets look unfinished. Why are Haage & Partner saying that if they don't sell enough there won't be any more releases of the OS? In my opinion they must first totally rework the system like the MacOS was reworked from 7.6.1 to 8.0.1 and Windows from 3.1 to '95 or even Commodore's AmigaOS from 1.3 to 2.04. That means they could offer an OS, say 3.8, with all the WB utilities to use and new ROMS optimised for this and only then ask for people's opinions on it and if they would buy it or not.

I really liked the new OS and already have my copy but I don't think that they should be so savage with the development.

Chris Tsaldaris
kick@x-treme.gr

Continued overleaf ➡

Sabrina Online by Eric W. Schwartz ©1999 "Monologue or dialogue?"



Check out Sabrina Online at http://www.coax.net/people/erics/

I think that in an ideal world with the kind of number of developers that Microsoft and Apple can throw at a problem, that is exactly what Haage & Partner would have liked to have done, but it wasn't. Even so, with only six full-on developers the new OS is very good and sales of it seem good enough to warrant an OS3.6 to come. Perhaps some of your wishes for new stuff might appear in that?

AMIGA OWNERS OF THE WORLD UNITE!

I think people are getting confused by Amiga, and non-Amiga owners must think that Amiga are a bunch of morons! Sure Amiga are doing some good things such as the website and AmigaOS3.5 but I am not too loyal towards the Amiga name, logos or the company. There's really just two things I like about the Amiga, the first is AmigaOS which I think is the best designed OS there is, it's certainly the most efficient, most flexible, and most modern design. The second is AutoConfig which seems to be rarely talked about these days. Amiga users seem to go on about Plug & Play more than AutoConfig! AutoConfig is what makes upgrading an Amiga so simple compared to other computers, Plug & Play doesn't work very well!

I propose that if Amiga don't do what we like that we write our own OS based on AmigaOS for the PowerPC CPU which could run on any PowerPC computer. Some companies could produce both inexpensive PowerPC computers and top of the range ones! With the best OS design and a powerful, modern and quite common CPU, as well as a decent expansion system based on AutoConfig (perhaps a really fast Zorro III standard could be made), we would have a computer that pretty much everyone would like to use. If the new OS was a lot like AmigaOS it should be easy to port existing Amiga software to the new machine and we will be going quite well again! As both a C and assembler programmer I would like to hear from anyone who would be interested in such an OS (either to write or to use). Please write to: fman@i-o.net.au

P.S. I really like the 'Amiga' logo, but I really hate the boing ball.

Adam Foreman
Victoria, Australia



Mmm, G3s (drool)...

Admittedly, I personally believe the way forward is through migration to the PowerPC, in much the same way that Apple have done, but I think another third party project to create a whole new operating system is doomed to failure from the start. There have already been other attempts to do so, but the only one still going is AROS, and they still haven't got a finalised version that runs existing Amiga apps on any other platform. I would urge anyone interested in pushing the OS forward and making it PPC-native to keep in contact with Haage & Partner in Germany and try to get on their developer program for future OS revisions.



Look, it's not that small, okay? I've had plenty of women tell me it wasn't size that was important anyway, mumble.

THE SMALL BOXES ARE EVERYWHERE!

I've been an Amiga user for about two years now and I'm longing to write software for it but I can't get to grips with Blitz Basic. The manual supplied is terrible – what language was it translated from? Besides all the spelling mistakes and syntax errors in the examples, the whole manual is very vague. Is there any chance of doing a tutorial on programming in Blitz Basic?

By the way, I'm glad that the Amiga MCC has been cancelled. My reason? Well, I have a phobia about small boxes. No, I'm not going mad. Just think about it: Sega Master System, Master System 2, MegaDrive, MegaDrive 2, Nintendo, the Sony PlayStation, Nintendo 64 and now the Dreamcast. There always seems to be a newer, better one just around the corner. The best idea I've heard of so far seems to be Power Computing's.

At the end of the day what are the faults of the Amiga? Speed seems to be one of the main issues every time so why not scrap the AGA chipset and replace it with a good graphics card allowing fast 3D animation. Basically give the Amiga a well earned service with modern parts!

Andrew Gaskell
Merseyside

Well, try out PureBasic which was with AF131. It's very similar to Blitz but, I know this isn't difficult, it does have marginally better documentation.

POINTS OF VIEW

Dear Ben. At the beginning of October I took the initiative and wrote to the BBC television about the Amiga. I highlighted their incomplete knowledge of the Amiga system and asked them whether they would consider doing a series on computer development. Then I mentioned some things about the Amiga, without going into too much detail, and where they could get some more Amiga information.

I received their reply the other day and they said that my suggestions would be passed on to the BBC Broadcast department. This department is responsible for commissioning and scheduling programmes so they will at least consider it. Even though they said my idea may not be successful it gave me another idea. Perhaps it would be better if all your readers could email or write to the BBC and demand that the Amiga development is shown to the public?

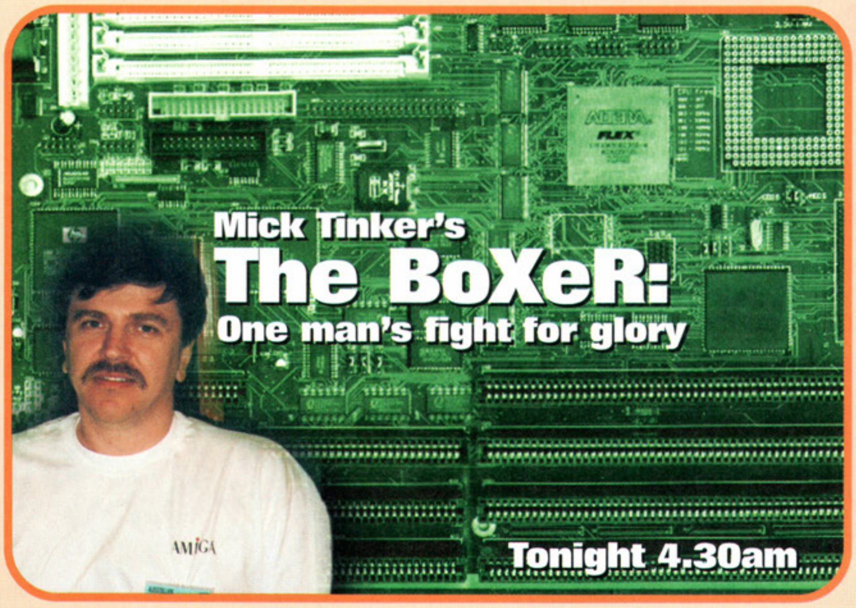
A high-profile television programme on either Amiga's research or other developments like the BoXer would be beneficial to the the understanding of our favourite computer. You never know, it may even convince Gateway 2000 that they have a potential money-spinner on their hands and they could give Amiga the financial support that they need!

It's worth a try and I don't see that there is anything to lose by doing something like this. It would benefit the developers, the consumers and the distributors by raising the Amiga's profile. The public has a right to know the truth about the Amiga and it's an opportunity to cast aside the negative image of this phenomenal computer.

The address is: BBC Broadcast Department, BBC, Broadcasting House, London W1A 1AA.

Chris Hindley
Flintshire

A fly on the wall documentary about Mick Tinker's travails to get the BoXeR out would be great, but then again, also quite technical, possibly too technical for Joe Public.



Coming to a TV near you soon? Just make sure you set the video – you don't want to be up that late!

I ♥ PHASE5

If I had to picture the actual situation between Gateway and the Amiga users, it would be us as a donkey with Gateway on top holding a big carrot on a fishing rod and laughing at how easy it is to drive the donkey with something he'll probably never get.

Seriously, how many years have we been waiting for something? Three? Five? I'm so tired of this. Gateway and such can get lost. The only company who's been with us the whole time is phase 5. They brought us 060, PPC, gfx cards, and now the Amiga clones.

Time passes and things change. The Amiga is not about Gateway anymore, and actually it has never been. The Amiga is about people who care, and as far as I'm concerned phase 5 never stopped caring. I think they deserve more respect than the official Amiga owners.

Diego Pappalardo
dpappalardo@arcadis.be

A great many people deserve more respect than Gateway, and while phase 5 is one company, there are plenty of others, including Cloanto, GPSoftware, Schatztruhe and more that have been here longer (and delivered on time).

HE'S MAD FER IT!

Dear *Amiga Format*, After about five months of picking up 16 free Internet CDs, I have found some .isp information files. In these files it gives you the information needed for *Miami* or *AmiTCP*. These are the CDs which I can't get to work because there is no .isp file: IC 24, Tandy, WHSmith Internet, Handbag.com, Skynow, Woolworths and Breath Net.

The ones which do work are Freeserve, BTClick, Lineone, Nationwide, Virgin.net, Tesco.net, Currantbun, Zoom and Madasafish. The best one is Madasfish because it gives you all the information you need in one place (on the web page on the CD) and gives you unlimited web space and unlimited email addresses.

If anyone has found any more information please email me at MegMark@Madasafish.com or you could send them in to *Amiga Format* – the best magazine ever!

Simon Cadman
Kent

Thanks for your kind words Simon. We've put all your info on this issue's cover CD.

LONG DISTANCE

Dear Ben, Thanks for the phone conversation while I was in your offices in Bath. The fellows at our computer club got quite a laugh that I was only able to get within 40 feet of you after travelling the 7,000 miles across Canada, the Atlantic, Greenland, Iceland, Scotland and London to get to Bath. I couldn't even get the several CDs that I sent to Nick for replacement, so when I told them that I'll still keep buying the mag they actually gave me a rousing applause. Most of them of course are now ex-Amigans and DOS box owners so I just ignore them as uncouth. Anyway, the photo shows that a part of the Clan did in fact get to Future Publishing and took some retribution for the CDs Nick has.

Why don't you have copies of the old CDs made so that those who have had the same problems with bad discs can just purchase them? There are probably many others who never purchased the magazine at the time who would be interested in obtaining these discs.

I do like the beginners series, the first article on the *AFCD* was a real gem so keep these articles coming.

Yours till the Boing bounces again,

George Anderson
Canada



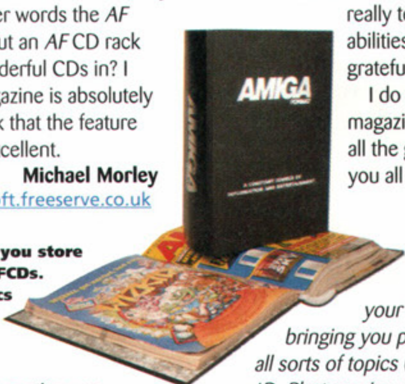
George Anderson from Canada takes revenge for his missing CDs.

Reduplicating older CDs is an expensive business and a time-consuming one to boot. We'd rather spend the time on making sure the tutorials, features and reviews in the magazine continue to be to your taste.

BIT OF A BIND

Whatever happened to the special offers section? I really think that you should bring it back. I want somewhere to store my lovely *AFs*, in other words the *AF* binders. How about an *AF* CD rack to store your wonderful CDs in? I think that the magazine is absolutely brilliant and I think that the feature on JavaScript is excellent.

Michael Morley
Mike@morleysoft.freeserve.co.uk



Let's see how you store your AFs and AFCDs. Send in your pics for us to print!

The special offers section was a good place to buy AF-branded merchandise, but now we're not really big enough to make AF binders, CD racks and the like a possibility. Why not make your own and send in pictures for us to see? I'm glad you like the JavaScript tutorial, the more feedback we get on the tutorials the better we can make them.

AMIGA ONLINE?

As an AOL user, I was somewhat surprised to find a link on their 'welcome' screen about Amigas!

It wasn't factually correct, Commodore apparently sold the Amiga to Gateway, but there was a link to a noticeboard for Amigans, old and new! Many of the postings were decrying the demise of Amiga games and even questioned whether they were available on the PC! We must be making waves somewhere.

Also mentioned, was the fact that AOL and Gateway were talking about some kind of partnership and there's also something about Amiga users demanding an open OS but clicking on the link goes nowhere.

I'll send you the link if you like but you'll need AOL to get it!

Richy
Aminutt@aol.com

Perhaps it was merely a sop to those Amiga owners that do use AOL, but it still pleases us to see this kind of thing. Remember that even if we feel somewhat left out of the computing mainstream there are very few people who haven't heard of Amigas – they just need to be brought up to speed. Perhaps this coverage on AOL will help make that easier?

TOP TUTORIALS!

Dear AF, Just a quick note to say how much I appreciate all the new tutorials that you have been running this year – keep up the good work! I especially enjoy the Banging The Metal & Synth Studies.

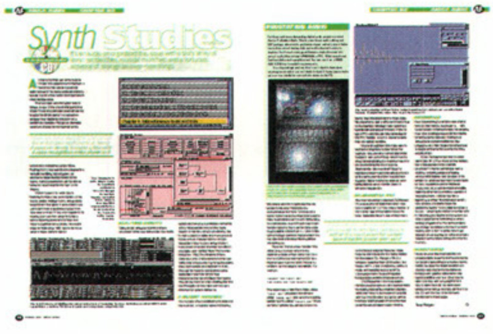
I have an A1200 with 420HD 50MHz 030 32MB RAM using OS3.0 I expect to upgrade to 3.1/3.5 soon. I mostly use my Amiga for music composition but as I learn more about programming I intend to build an I/O device to allow me to control some external machines and hopefully then I shall really test Amiga's multitasking abilities. Any ideas will be gratefully received.

I do subscribe to your magazine so a big thank you for all the good work and effort that you all put in.

Tony Mills
Erotogeny@aol.com

Thanks very much for your kind words Tony, we'll be bringing you plenty of new tutorials on all sorts of topics (including Opus, Cinema 4D, Photogenics and OS3.5) in the new millennium and beyond!*

Ben Vost



Synth Studies was a great look at music and the Amiga, but look out for other topics soon!

MailBag

Special Delivery

We asked the folks on afb what they thought of the new OS. Here's a selection of their answers.

GET THE OPUS UPDATE!

My twopence about the new OS for my beloved Miggy is that it's great. I can actually have the RAM icon I want installed on Workbench and booting with no startup I no longer have to resize the window to be centred on my screen. Now all I need is for all the icons to work properly with *DOpus*!

Bifford the Youngest (Sam Byford)
sam@biffordyoungest.u-net.com

SHORT BUT SWEET

A welcome and useful update, with hopefully more to come.

Kevin Fairhurst
redvers@bigfoot.com

JUST LIKE WINDOWS?!

Finally our prayers have been heard, we got what we asked for: An Amiga OS acting exactly like Windows. Finally they've managed to develop an unstable Amiga OS. At least that's what I thought after installing it on my A3000 with the official installer. Only after installing it all by hand it is stable. I like the looks, speed and some of the extras. I hate the new *FFS* (which I removed), the installer-script and AmigaMail.

OS3.5 is a step forward. I am glad I've got some Amiga experience because otherwise there's no way I would have been able to get it all stable. So I reckon H&P should be spending some more time on the installer just to make it more fool-proof.

The feeling of higher speed combined with fresh icons make it all look a lot better. The new tools and utilities mean a step forward. What I do miss is a VisualPrefs kind of GUI editor. It is not a feature that is needed but it would alow us all to re-style the GUI and thus showing that Amigans do the things the way they want.

Bert Volders
bert@volders.demon.nl

FROM 3.0 TO 3.5

It can be a bit of a pain to install if, like me, your going from WB3.0 using a SCSI only system (via Squirrel) due to the necessity to install 3.1 first and reboot (without any WB3.1 disks) but it is worth persevering with. There aren't too many problems with the software once it is installed (*DOpus* problem being fixed). The HTML manual is very good and well implemented and the new icons look nice or they did until I put *DOpus* back on top of them. Overall it's a good start and I look forward to seeing the next update.

Carl Berry
Lancs
mlist@cberry.prestel.co.uk

ME? NO. OTHERS? YES.

Will I be buying OS3.5? To put it simply, no. I'm not saying I wouldn't if I had some money going spare but, to be honest, I have better things to spend my money on. Right now, my Amiga does everything I need it to. I don't need upgrades to my software, I don't need a faster processor and I certainly don't need a new OS in order to carry on using it in the same way I've always used it. My Amiga has become little more than an email machine since I got online and buying OS3.5 isn't going to make it perform this one task any noticeably better in any way (in my opinion, at least).

Should other people buy it? Yes, of course they should if they are going to want to run new software and/or do away with the hacks and patches that are currently propping up their system. If they want to support the Amiga they should buy it. If they want there to be another, even better OS (4.0?), they should buy it. If they want to carry on using their Amiga for the same tasks they use it for now, with no new software and none of the advances present in OS3.5, they don't really need it.

Martin
baseheadz@bigfoot.com

YOU HAVE THREE CHOICES

1 Buy OS3.5 and improve the stability and functionality of Workbench whilst at the same time supporting Amiga and continued development.

> *Buy it, use it or lose it. It's better than all the patches and believe me, I've used them all.*
> *Maarten Draijer* maartend@dds.nl

2 Say "I'm not going to bother because all it does is replace the patches that I've already installed"

3 Buy it anyway because if too many people choose option 2 it's going to be the last OS update ever. Use this opportunity, while you still can, to update as far as possible. Upgrade, you won`t regret it.

Jonathan Day
jonday@totalise.co.uk

STABILITY ROCKS!

Today most users of OS have a hard disk full of patches and hacks. This makes new software far harder to develop as so many variables exist. Developers need little encouragement to stop working on Amiga software, so a new stable, reliable and consistent platform to develop for must be a good idea.

Anthony Prime
anthony@prime.clara.co.uk

AGAINST MY WILL

I certainly didn't want to buy OS3.5 before a couple of months had passed because I knew that it would take at least that much time until more skilful users were able to tell which commodities still worked, which didn't any longer and how to adapt them. So I was surprised to learn that my favourite dealer, who also happens to be a good friend, had pre-ordered it for me without even asking!

Even though I knew I wouldn't have much time to devote to it, I installed OS3.5 (safely keeping my previous 3.1 system on a bootable partition, just in case) and it works, more or less – or should I say more and less?

Windows seem to open much faster, the new icon system looks good – even though I replaced most of the ugly glowicons drawers – but I still have problems with docks that only show after an incredible delay on bootup.

Something should be done to help all us average users to clearly explain how our previous patches can be used or not! For example, *ToolManager* works fine for me and some people have said that there were troubles with MCP, but I don't have any!

Patrice Champarou
France
pmchamp@club-internet.fr

NOT ENOUGH

I don't have OS3.5, and currently have no intention of buying it. From what I have seen and read about it, it doesn't appear to offer enough of an improvement over OS3.1 to the average user. It may be more stable than using lots of patches to achieve similar aims, but my OS3.1 system is very stable, even after running lots of patches.

When the new features of OS3.5 (Workbench AREXX enabled seems to be the only useful one) become in more common use, perhaps I will purchase it. Until then, it' will stay at the bottom of my shopping list.

Daniel Thornton
thewibble@cwcom.net

A MUST BUY

After six years I get to install the latest AmigaOS, finally I can remove a dozen patches! My machine now boots quicker and runs faster. I`m also looking forward to better features as the OS now evolves. My recommendation? A must buy!

Alan L.M. Buxey
kcci1@central.susx.ac.uk

The Gallery

On the CD
-ReaderStuff-/-Gallery-

With such poor contributions, it's just lucky there's a picture good enough to win £50!

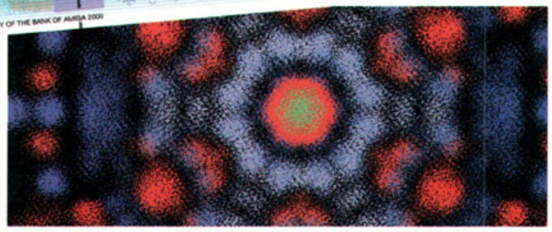
£50 WINNER!

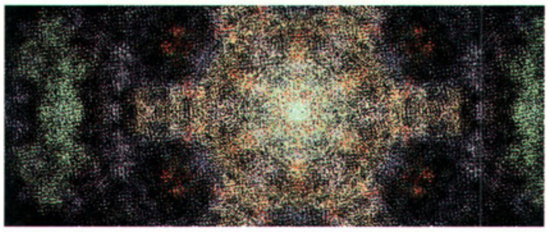


It Came... by Ogy

I thought we were going to have a gallery without an image worthy of the AF £50, but fortunately, previous winner Ogy brings us this confection, reminiscent of one of the posters for George Pal's War of the Worlds...

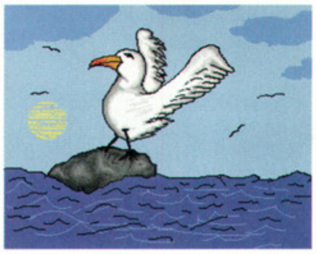






BRYAN and CINDY by George Davidson

Both pics took a matter of minutes to create, being done as they were by the eponymous Bryan and Cindy, who are nine and seven respectively.







A selection of pics by Roger Håseth

Roger's actually a big fan of Enya's music, honest. He was fed up with just seeing rendered pics in the Gallery.













CONTRIBUTIONS

If you'd like to enter your work (and it should be only your work!) for the Gallery section on the CD and the pages in *Amiga Format*, read the Reader Submissions advice on the CD (you can find it in various places) or simply make use of the form that can be found on the CD pages of this issue.



AFCD 48

Prepare for fun and adventure because we've squished a staggering 41,792 files on to this issue's coverdisc

WASTED DREAMS DEMO

-ScreenPlay-/-Commercial-/WastedDreams.demo

I know what you are thinking. *Wasted Dreams* demo, seen it, played it, got myself the T-shirt. But that's where you are wrong. This a new demo, exclusive to *Amiga Format* by special arrangement with the game's developers, Digital Dreams Entertainment. We are also hoping to bring you a playable demo of the next project, *Hell Squad*, on the next issue's coverdisc.

You've probably all heard and read about *Wasted Dreams*: Paul reviewed it in issue 128 after all and is currently doing a walkthrough solution in our GameBuster pages. If all this hasn't persuaded you to buy a copy of this atmospheric and rather myserious adventure game, then maybe this new demo will.

The game runs straight from the CD, no installation required. While the full game offers dialogue in several languages, this demo is only in English. The game starts with you waking up on the surface of the planet Agilera, the survivor of an inexplicable spaceship crash. Your job is to find out exactly what is happening on this strange world.

You can move around in *Wasted Dreams* with either a joystick or the cursor keys. Movement is possible in eight directions, as is combat. The fire button or shift key fires any weapon you may be carrying. You start the game unarmed, so until you find some means of self-defence you will have to fight with your bare hands.

The status bar at the bottom of the screen shows how much ammunition you have left for your current weapon and also shows your shield status. When enemies attack you this shield will be damaged and when it reaches empty you'll be vulnerable. At some point though you'll come across a re-charger which will replenish your shield strength.

(Below) 'Hey. How about some service? I've been waiting here for hours.'
(Bottom) Anyone fancy a dip?



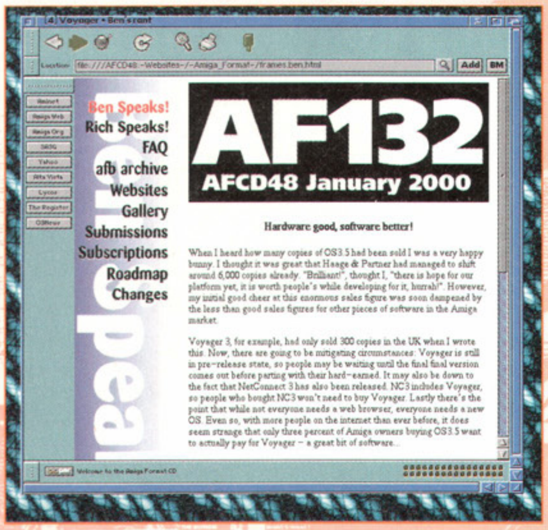


WHAT'S NEW

The *Amiga Format* coverdisc has a new look for the new millennium*. Forget all that semantic quibbling over what the word means or even when it begins, all that matters is that we are going to be clean and shiny, coverdisc-wise, for the new year.

Ben has been beavering away, reworking the HTML, crafting new images, learning JavaScript (with help from myself and Neil's tutorials), and has created a new HTML front-end for the CD. You will need a JavasScript-enabled browser to get full benefit from Ben's labours, but, even without, I think you'll agree that it has been worth the effort. While testing the pages, we encountered problems in *AWeb* and *iBrowse2* with the rollover images for the buttons down the left-hand side of the pages. This has us stumped at the moment – they work perfectly in *V3* and *Netscape* – but, hopefully, we'll have the problem remedied for the next issue.

The other new feature for this CD is an updated version of AFCDFind to support AmigaOS3.5. If you receive a drawer as the result of a query, you can now get Workbench to open its window for you – just like you could with *DOpus* and *Scalos*.



Out with the old and in with the new. Our CD's looking smarter for the next millennium*.

OBJECTS AND ACTIONS

Throughout the game you will find objects that you can pick up. These will be listed in your inventory at the bottom of the screen. Only one object that you are carrying may be activated at a time. This is selected by holding down the left Alt key (right Alt for player two) and using the joystick or cursor keys to select another object.

When you come across objects or characters in the game with which you can interact, an icon will appear in the status panel at the bottom of the screen. Pressing the fire button or shift key will perform that action rather than firing.



LOOK

Allows you to look around a particular location or examine any interesting or useful objects.



TAKE

If it's possible to pick up an object, this icon appears. When you take an object it will be shown in your inventory beneath the status panel.



GIVE

If you meet a character who has some object that you need, you can offer to exchange some object you are carrying for it.



USE

Some objects may only be used in particular locations. If your selected object can be used at some spot, this icon will appear.



TALK

Some situations are better dealt with diplomatically. If this icon appears, you can speak to a character in the game.

STFAX4

-Serious-/-Commercial-/STFax

STFax4 is a package designed to turn your Amiga and fax-modem into an advanced communications system. It enables you to send and receive faxes, use your modem as a hands-free speaker phone, operate a sophisticated voice-mail message service and even to run a simple bulletin board system – all via a single phone line. The software automatically determines whether an incoming call is voice, fax or data and makes the appropriate response. This package stands head and shoulders above similar products on rival platforms and well deserved its Gold award in *AF130*.

This time-limited *STFax* demo may installed from the coverdisc with the script provided. The program is fairly self explantory if you are used to MUI applications. In effect, it is very much like an email package, but instead works with faxes and voice messages. Full documentation is provided with the demo, both in AmigaGuide (accessible at any time from the program with the Help key) and HTML formats. However, the boxout will lead you through sending a fax just to show how easy it is.

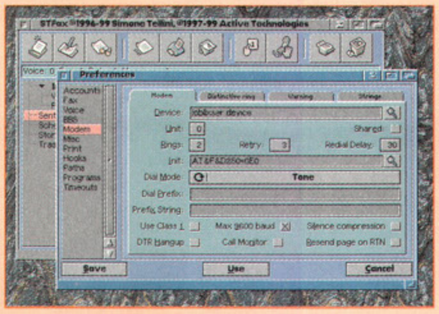
CYBERMAGIC

-Serious-/GFXCard/Cybermagic

Screensavers are becoming rather passé these days. However, if you are bored with your blanker and you have an Amiga with a 3D graphics card powered by CyberGraphX, then you might like to give this new one a try. *CyberMagic* is a modular blanker with a difference. Supplied modules include the usual dull Moire patterns and starfields, but more interesting are the 3D animations. There are three to choose from, all of which look like fairly standard OpenGL animations (and so require *StormMesa*). My favourite is a spinning cube with the OS3.5 logo.

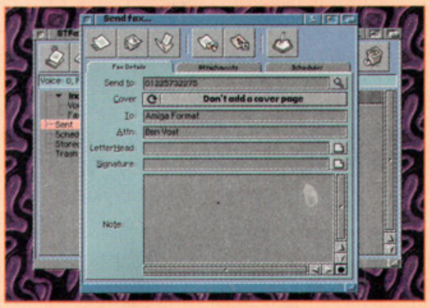
CyberMagic is used much like any other blanker. You install it, and dump the blanker commodity into your WBStartup drawer so it is run automatically at boot time. The preference editor, realized with a GlowIcons style, is popped up with your choice of hotkey combination and allows you to select which module brightens up your slack moments or it can be set to choose one at random. *CyberMagic* may be a gross misuse of processing power, but it certainly looks great.

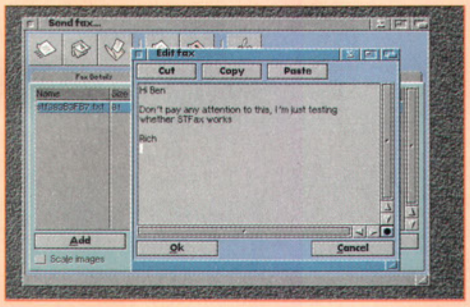
SENDING A FAX



1 The first step is to make sure *STFax* is configured correctly for your modem. This is done via the Settings option in the Preferences menu. Move to the Modem page of the window that appears. The minimum amount of setting up needed is to select the serial device that your modem is connected to and the modem's init string. If it is one of the supported types, the latter may be filled in automatically by selecting the modem type from the pop-up list. Otherwise consult your manual. Then select Save.

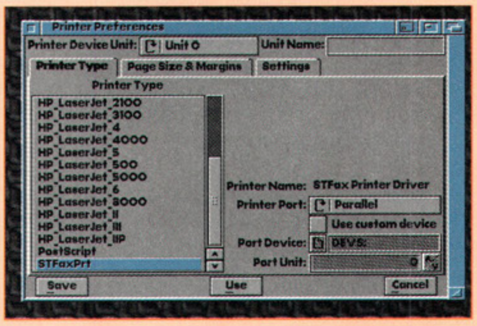
2 You can create a new Fax to send by hitting the leftmost gadget of the main window's toolbar. The first page of the 'Send fax' window covers the key fax options. 'Send to' is the 'phone number that you want to transmit the fax to. This can either be filled in manually or selected from the built-in address book. 'To' and 'Attn' detail the intended recipient of the message. If the 'Add a cover page' option is selected, this will be printed on additional sheets to your main document along with any message in 'Note' entered at the bottom.





3 The Attachments page selects the document(s) that will be the main body of your fax. These can be already prepared files in plain text or a datatypes-supported image format and are selected from a file requester with the 'Add' button. Alternatively you can create a plain text file with the built-in text editor via the 'Edit' button. Once you are happy with your fax's contents, you can hit the 'Send' button on the toolbar to transmit it.

4 In addition, documents can be imported into *STFax* with the *STFax* printer driver. This will work with any program that knows how to print, for example your word processor or DTP package. Just select the *STFax* printer driver as your target printer, either from the external program's printer set up options if it supports it, or with the standard Workbench printer preferences. When you print to *STFax* in this manner and the main program is running, it will automatically pop up the Send Fax window for you to fill in the other details.



> *If you're bored with your screensaver and want something a bit more interesting on your screen, check out CyberMagic's 3D animations*



CyberMagic is a revolutionary screensaver. Geddit?

YAM SPELLCHECKING

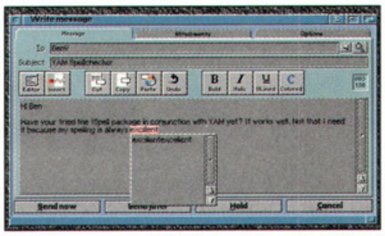
-Serious-/Comms/Other/iSpell_YAM

It has to be said that the standard of spelling in email is generally appalling. I suppose the justification is that email is so immediate that it is closer to the spoken rather than the written word. But, personally, I think that while the odd typo here and there can be forgiven (Lord knows, I make them myself), bad spelling detracts from the content of your message. The reasoning is sloppy writing, ergo sloppy thought.

With this in mind, wouldn't it be nice if your email package had a built-in spellchecker to catch those odd lapses? If you are a user of *YAM* then you might not know that it already supports spellchecking via the TextEditor custom class it uses for composing mails. The problem is, though, that it is a bit of a pig to set up yourself. Not any more.

This package is a set of ARexx scripts that interfaces *YAM* with *ISpell*, the open source spellchecker (which is also used by

Continued overleaf ➡



There's now no excusive for bad spelliing in your electronic missives.

Your Stuff!

Picture that old recruiting ad from World War I. You know, the one with Lord Kitchener pointing his finger. Now, replace his handlebar moustache with a goatee, give him a crew-cut, add some glasses, cross out the word 'Country' and substitute the word 'Magazine' instead. Do you see it yet?

The point is that the once steady stream of readers' contributions has slowed to all but a trickle. We didn't even have enough Gallery entries this issue to fill the usual spread. What's wrong with you all? Are you all so loaded that the prospect of winning £50 doesn't excite you? Or are you not proud enough of your own work to have it displayed before the eyes of all our readers? Whatever it is, snap out of it. We want your stuff!

Okay, moaning aside, it's time to award the prize for this issue. Unusually, for this coverdisc we had a CD audio track contributed by one of our readers, Øyvin Thuv. Øyvin created this tranquil number, titled like all his work 'Untitled', on his Delfina Lite-equipped Amiga with *DigiBooster 2.2.1*, *Sound Studio* and *SoundFX*. I found his composition a refreshing change from the majority of MODs doing the rounds, so that is why the 50 notes will be winging their way towards Norway.



£50 WINNER!

GoldED's JOYCE add-on). No installation script is provided, it all has to be done manually, but a thorough guide is provided on how to perform this. It even includes screen grabs to make sure you get everything right. Once set up, it can automatically check your spelling as you type and signifies an unrecognised word by beeping the screen. You can then get a suggestion to substitute for the offending word by highlighting it with the mouse and hitting the Help button.

IMAGE ENGINEER

-Serious-/Graphics/ImEngV3.41

Image Engineer is, as the name implies, an image processing package. It is packed with the sort of tools that will be indispensible for your everyday image manipulation tasks. It boasts format conversion, image scaling, flipping and cropping. You can adjust an image's brightness, contrast and saturation. You can blur and sharpen. What makes the package more interesting is its more exotic

EXODUS

-ScreenPlay-/Shareware/exodus







Command and Conquer eastern-block style with Exodus: The Last War.



It seems that the real-time strategy game is the genre in vogue for Amiga game programmers at the moment. We've already had *Moonbases*, the excellent *Napalm* and several more similar games are promised from various developers. A project you may not of heard of, though, is *Exodus: the Last War*.

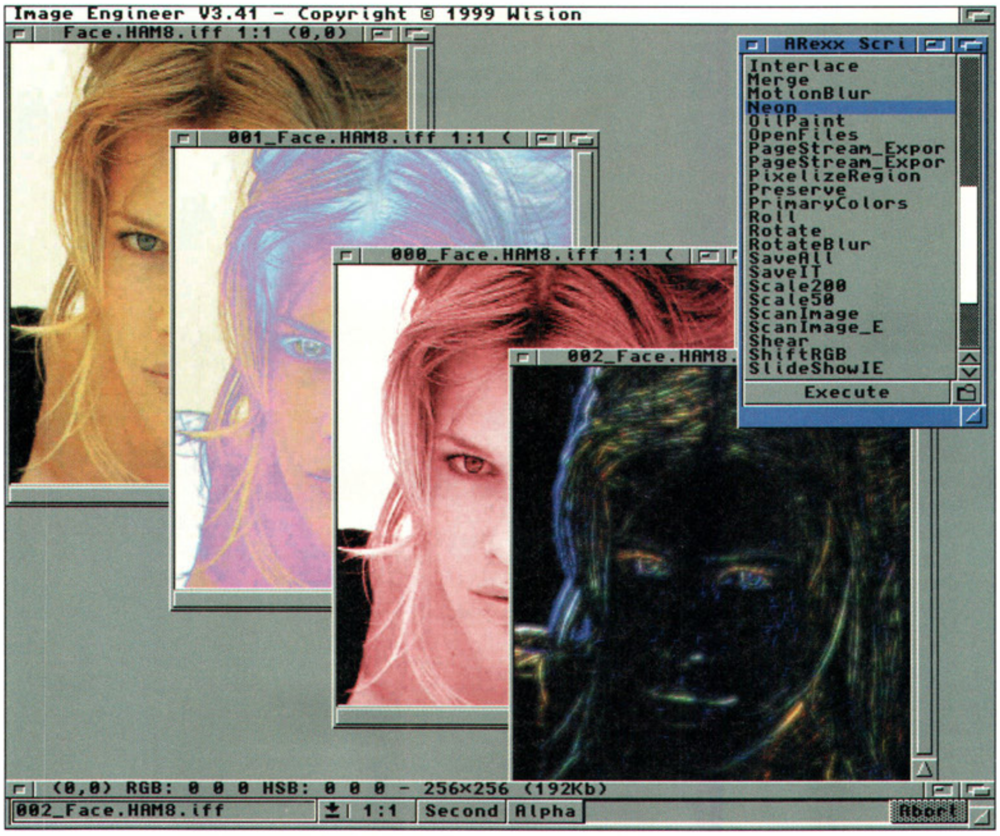
This games hails from Poland, so unless you parlez that language this demo will be a bit confusing. Never mind, even if you don't understand fully what's going on, as long as you're familiar with other games of this type, you'll be able to get a feel for the action. Thankfully, the finished version will have an English translation. Likewise, this demo plays only in AGA screenmodes at the moment, but the graphics card support is promised for the final.

Exodus is currently shareware, but we have heard that several Amiga dealers have expressed an interest in publishing it. We'll keep you posted.









With Image Engineer you can perform some truly wacky image processing.

effects, however. It features an extensible range of filters such as antique, fresco, oil paint, neon, solarize and pixelize whose effects range from subtly changing an image's mood to contorting it way beyond recognition.

> With Image Engineer you are provided with a range of filters that can subtly change an image's mood or contort it beyond recognition

This demo version of *Image Engineer* is restricted to only handling images of up to 400 x 400 pixels. Paying the shareware fee of $35 will remove this restriction. Everything required to run the package is included within and installed by the script provided, except for the SuperView library. This can be found on our coverdisc in the drawer -Serious-/Graphics/SViewIV/SuperViewLibrary.

Richard Drummond

DISCLAIMER

This *AFCD* has been thoroughly scanned and tested at all stages of production. We recommend that you always run a virus checker on ANY software before running it. Future Publishing Limited cannot accept any responsibility for disruption, damage and/or loss to your data or your computer system which may occur while using this disc, the programs or the data on it. Ensure that you have up-to-date backups of data contained on your hard drives before running any new software. If you do not accept these conditions, do not use this disc.

DISC NOT WORKING?

If your *AFCD* is defective, please return it to the address below. Please make sure you have followed our installation procedures correctly to ensure that there is no physical problem. Please send us the *AFCD* along with a description of the fault (not forgetting your name and address). A new working version should be returned to you within 28 days. The return address for faulty discs is:

TIB PLC • UNIT 5 • TRIANGLE BUSINESS PARK • PENTREBACH • MERTHYR TYDFIL • CF48 4YB

Your *AFCD* should only need replacing if the CD itself cannot be read. If you're experiencing problems with an individual application, phone our technical support line This is open between the hours of 2pm and 5pm every Tuesday.

Tel: 01225 442244 Fax: 01225 732341

Email: amformat@futurenet.co.uk

(Please remember to put "Coverdisc" in the subject line.)

Please note that the helpline staff provide assistance with technical problems directly related to the CD and cannot provide training on the software or hardware in general.

We want your work!

You can either send it to us on floppies, Zip disks or CDs (we do take other media formats too). If you are going to send us a multiple floppy backup of your work, please use the version of *ABackup* we supply on the CD in the +System+/Tools/Disk_Tools drawer. We'll return any Zips you send us, so don't worry about getting your disks back.

If you have any further queries about how to send your software in then consult the Submissions Advice on the CD (in Start_Here!, or in the ReaderStuff or +System+/Info drawers).

Files you send this month will probably appear on *AFCD50* – *Amiga Format*'s March issue.

Please tell us:

Your name: ....

Your address: ....

....

Your postcode: ....

A contact number or email address: ....

Your signature: ....

In respect of all material which forms my reader contribution to Future Publishing's Amiga Format I hereby warrant that:-
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(2) the material does not contain any material which is defamatory, obscene or indecent and is exempt from classification under the Video Recordings Act 1984;
(3) that there are no legal claims against the material provided;
(4) that I have full power and authority to provide this material to Future Publishing.



Serious Disk

Got the memory of a goldfish? Let DRemind give it a hefty jog and you'll never forget when the next issue of ***AF*** is out

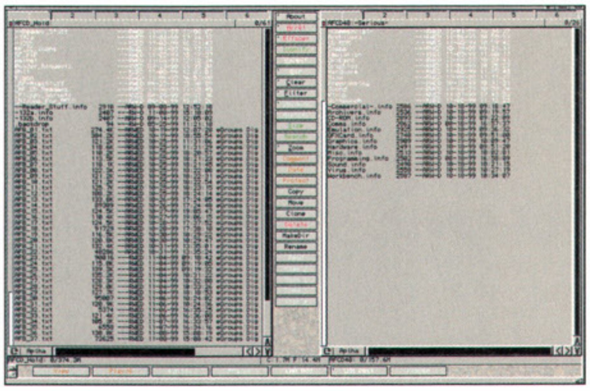
DREMIND

DRemind is a program that allows you to set up specific events that you need reminding about using it's separate preference editor. Once installed, you should never have an excuse to forget anything anymore (assuming that you input the event into the *DRemind* editor in the first place!). So, while you are busy at your Amiga, *DRemind* will be busy in the background counting down the time to the next event it's going to remind you about.

Some possible uses for *DRemind* would be to tell you when a television programme starts, when it's someone's birthday or even when you need to pay the rent. *DRemind* is a MUI application that requires OS2+ to run as well as a few standard libraries.

The *DRemind* package also comes complete with *MicroReminder*, which is a little program designed to remind you of an event that will happen in only a few seconds time. For example, if you put some soup on the cooker for lunch and returned to your Amiga to carry on working, it could be all too easy to get wrapped up in what you are doing only to remember, half an hour later, that the soup was on the go by which time of course it's bubbling all over your nice clean cooker.

If you've got such a bad memory that you can't even remember when you put the dinner on, DRemind is the package for you



Ecodisk is a great little file manager, if space is in short supply.

ECODISK205

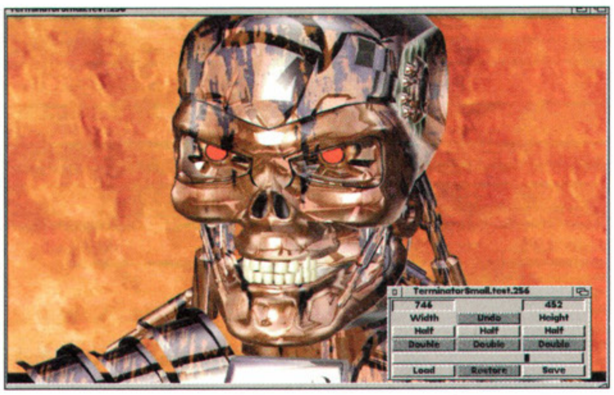
EcoDisk is a file manager similar to *Directory Opus 4*, but where it scores points is its size. The whole EcoDisk directory is a mere 212K, without its readme and the French version, so this means that it's very transportable and can easily be dumped onto an "emergency set-up" floppy disk.

Although it's obviously not as powerful as *Directory Opus*, *EcoDisk* supports a whole host of commands including the execution of DOS, Workbench and ARexx commands. It recognises different filetypes and can then execute appropriate commands for that filetype. It even includes its own internal module players. *EcoDisk* can be completely customised to suit your particular needs. It requires at least a 68020 and Workbench 3+

PICSCALE

PicScale is a simple and very quick little utility that will load any image that is supported by your DataTypes, remap it to your WB screen, and display it in a window. After loading the picture, *PicScale* gives you the ability to quickly re-size, in a variety of ways and then save the resized image (or any part of it) as a standard iff/ilbm picture.

Because *PicScale* manipulated data using your Amiga's Fast RAM, you will find that it uses very little Chip RAM and works extremely quickly. *PicScale* requires WB3+ to run and the reqtools.library. Since *PicScale* loads images using Workbench's datatypes it obviously also requires the correctly installed datatype for the images that you want to load.



Scaling your pictures couldn't be easier with PicScale.

Errol Madoo

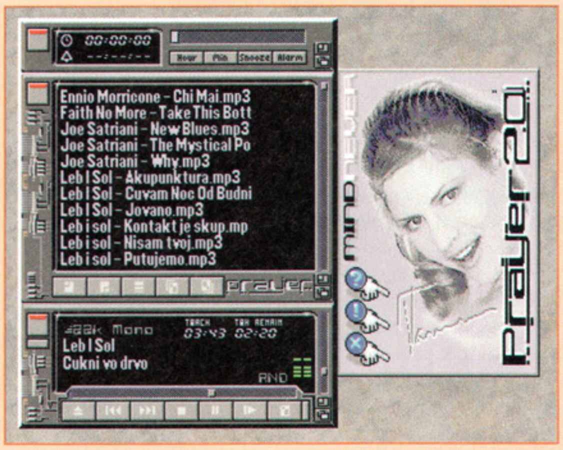
ZOOM

Zoom is a compact tool that is intended as a bridge between the increasing number of different filetypes found on your Workbench and the equal number of specialised file viewers/readers/players that come with them. You simply need to drop all files onto the *Zoom* AppIcon and it will identify the filetype from its library database of nearly 700 different filetypes and then run an appropriate tool as you have specified using its prefs program. Xfdmaster.library allows *Zoom* to unpack a huge variety of packed files on the fly, you can also configure *Zoom* to run via the Tools menu, and because it uses the fileid.library, Zoom is able to identify 600+ filetypes at present! Zoom requires a minimum of OS2+ to run and various libraries, which are all included.

PRAYER2.0

Prayer2 is a powerful GUI based MPEG audio player using mpega.library. In order to make *Prayer* as compatible as possible it has been designed to play audio using the native 14-bit Amiga audio driver. *Prayer2* can also play other sound files, by using the provided plug-ins for: WAVE, ADPCM, CDDA (which is designed for real-time reading from CD-ROM drive) plus full support for everything else that the datatypes.library can read.

***Prayer2* can save everything that it can play, in AIFF output format (more formats will be added on demand). So you can even use it for converting MPEG –> AIFF, or for grabbing CD titles straight from CD-ROM to AIFF file. *Prayer* requires an Amiga running at least OS3+ and a minimum of a 020+ CPU although a faster CPU is preferable.**



Tamara Cetinjski stands by her creation... Prayer.

Games Disk



We're packed to the gills with arcade, pub and computer classics, all for your reminiscing pleasure

MR E

MrE is a compendium entirely written by *Amiga Format* reader Steve Eaborn. It consists of five games that are based on old classics that have also featured in Reader's Games. Each of the games has been re-compiled with the new amos.library so if they didn't work on your machine before then they should do now.

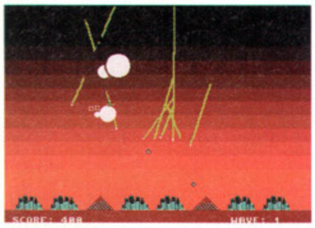


ReelSkill looks authentic, but does it let you play for hours and only pay out when your mate has a go?

The first in the set is *MazeMan*, which is a 16 level colourful clone of the age old *Pacman* in which you need to eat the dots

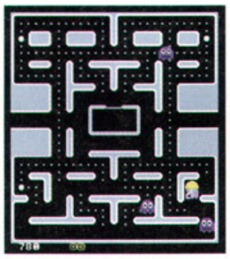
> If you are a budding AMOS programmer you can have a peek behind the scenes, see what Steve has done and get some new ideas

as fast as possible without getting killed by the pursuing ghosts. It includes all the features of the original game, including its sound, and also supports two player dot eating. *Missile* is a mouse driven clone of the original *Missile Command*, the aim which is to protect your city from the constant barrage of ICBMs.



Incoming! You've got to have your wits about you to play Missile.

Patience, the third game in the collection, is the single player card game that everyone knows. The object here is to sort the cards out in ascending order and as fast as possible. Although Steve's *Patience*



isn't as powerful as some of the other patience games available on the Amiga, it's compact, quick and does the job effectively. Then there's *ReelSkill*, a pub fruit machine simulator and includes all the features of a real machine except perhaps for being able to pay out with real money or tokens and the last in the lineup is *Connect4*, my personal favourite. This is a thinking game where the idea is to "connect" four counters in a line either horizontally, vertically or diagonally. If you don't have a friend handy, you will find that if you elect to play against your Amiga Steve's *Connect4* plays a pretty good, challenging game.

Steve has also included the AMOS source code for each game, so if you are a budding AMOS programmer you can have a peek behind the scenes, see exactly what Steve has done and perhaps get some new ideas for your future game masterpiece. Steve hasn't used any extra extensions, and although these games were written in Amos Pro, they should also be compatible with AMOS 1.3. All in all this is a great collection and there really is something for everyone.

SHARKS! V1.2

The aim of this game is to dive down to the seabed, collect as much treasure as possible and take it back to your boat to gain points. Just to make life a little more interesting you will also need to avoid many of the hazards and pitfalls that the game chucks at you. Sharks, electric eels and other sea creatures – no matter how happy they look – are all intent on making your life hell and will cost you points if you get too close. *Sharks* features bonus levels, skill levels and its speed can even be adjusted to suit your Amiga. To install *Sharks* on your hard drive, simply copy the entire directory to your chosen location and double-click on it's icon.



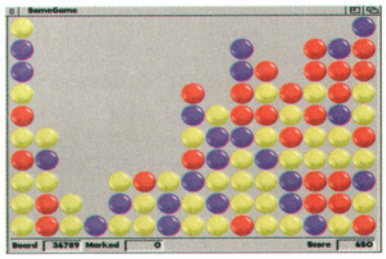


A great game to play when you're having fish and chips for tea!

SAMEGAME

The object of *Samegame* is to clear all the coloured balls from the play area. As you move your mouse pointer over the coloured balls some of them will be selected (when two or more coloured balls are connected in a block), clicking on the selected balls will remove them from the play area and the balls above them will drop down to fill the empty space. When a column is empty, all columns to the right of it are shifted to the left. All you need to do is remove all the balls in the play area. Sounds easy doesn't it? *SameGame* doesn't require any fancy installation and apart from its program file and icon the only other file it needs is its hiscore tables. *Samegame* should work on any Amiga with at least Workbench 2, but for some features Workbench 3 is required.

Errol Madoo



Oh Balls!... lots of coloured ones.

TINYTAINER

***TinyTainer* consists of two separate games, *Mines* and *Mastermind*. The first of these is *Mines* which is controlled with the mouse and is played on a randomly mined rectangular area. The aim of the game is to find out where the mines are without getting yourself blown up.**

Next in the lineup is *Mastermind* which is played with eight different coloured squares. The computer randomly chooses, and hides, five of them and your task is to find out which colours have been chosen. It doesn't stop there, not only do you need to find the colours chosen but you'll also need to find out their exact positions.



One false move and you're fried.

DISK NOT WORKING?

We take every care to test the coverdisk software, but Future Publishing cannot accept any responsibility for any damage occurring during its use. If your disk is faulty, send it back with 2x26p stamps and an SAE to:

AMIGA FORMAT (insert name of disk) • TIB PLC • UNIT 5 • TRIANGLE BUSINESS PARK • PENTREBACH •MERTHYR TYDFIL • CF48 4YB

If there is a manufacturing error then the stamps will be returned with a replacement disk.



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A1200 memory board 8MB plus FPU and battery back-up clock, £15. ☎ 01592 782976.

Soundmaster high speed stereo digital audio sampler with volume controls and Audiomaster 4 software, £25. Real Things animation software: Humans, Safari, Sealife, Animals, Horses. £6 each, £25 for all. ☎ 0113 2930758.

40 meg 2.5" hard drive £10. ☎ 01203 348486.

Amiga software including WordWorth 6, Turbo Print 7 upgrade, Turbo Calc. Games, utilities disks and CDs too numerous to mention. List available. Also cheap blank disks. ☎ Ron 01494 785711.

NetConnect2 CD-ROM £20, STFax 3, £10 plus £2 p&p each. Get on the net with the best! Sale due to upgrade. ☎ 01405 860798 anytime.

Blizzard Turbo A1220 accelerator for A1200. 28MHz 68020 CPU plus 6882 FPU. Includes 4MB 70ns SIMM, £40. ☎ David 01287 660141 after 6pm.

Replacement internal disk drive for A1200/A600 in good working order. Selling due to upgrade to high-density drive, £10. Email sales@mikeevery.clara.net

Hand-held Colour Power Scan scanner. Comes complete with software and OCR, cables and manual. £45 plus p&p. £10. ☎ 01304 831416 after 7pm or email pamj@ukonline.co.uk.

Amiga 600 with 90MB hard disk, 2MB RAM, 8 speed CD-ROM, LC200 colour printer, 15" monitor, loads of games, £145. ☎ 0115 9312989.

Apollo 1230 030/25MHz w/MB, £50. Also, various keyboard interfaces. Email geo@2-cool.co.uk or ☎ 0141 3575288.

A1500 1MB with Philips 8833 monitor, Star Z4-200C colour printer, MIDI interface. Over 20 boxed games, Wordworth word processor and many unboxed games and utilities, £150 ono. Could separate. ☎ 01633 891340 evenings.

Amiga 1200, 040/25MHz, 18MB RAM, 120MB hard disk, 2x CD-ROM, two external disk drives, 56K modem, black and white scanner, monitor, mouse and joystick, £200. ☎ 01494 580912.

Canon BJC 620 colour inkjet printer 720dpi. Separate ink cartridges for easier replacement. Full set of unopened Canon inks included (worth £25). Excellent condition. Boxed with manuals, Amiga (Turboprint 5) and PC software, £75. Printer cable required. ☎ Trevor 01842 764038.

Apollo 1240/33MHz and 16MB RAM. Will also throw in 365MB 3.5" IDE hard disk, £50. ☎ Dan 01274 735943 or email d.plant@scm.brad.ac.uk.

A1200, 170MB hard disk, Viper MkV accelerator, x8 CD-ROM drive, 32MB RAM, MouseIt, loads of software and AF CD-ROMs including DrawStudio (registered), Wordworth Office, Myst, £400 ono. ☎ 01493 653961.

40 original boxed software items mostly games, four to five utilities, £5 per box inclusive of p&p or make me a sensible offer on the whole lot and we'll work something out. ☎ 01788 570198.

ZYDEC black and white hand scanner including PSU, interface, software etc, £20. Original A1200 PSU, offers? Consider swap or part-exchange for other A1200 compatible items (MIDI, Sound Sampler etc). Email sean@visions-mag.freeserve.co.uk.

Amiga 4000/030, 18MB RAM, second disk drive, 2.1GB HD, desktop, monitor, 4x CD-ROM, Revision 11 Buster. A lot of software and resources, £490 ono. ☎ 01322 287644 and ask for Sayer or email sayer.hilton@lineone.net

A1200T 1260/50 with SCSI kit 1GB hard disk and 24MB RAM. 4x external SCSI CD-ROM, needs A4000 keyboard, £600. Email yplings@enterprise.net.

An Amiga 1200 in original packaging with 350MB hard disk and a 68030 accelerator card at 50MHz, 18MB RAM. Comes with joystick and CD³² joypad. Speakers (worth £30) also included along with hundreds of pounds worth of professional packages and games software installed. £250. Email steve_bruce@lineone.net.

Amiga 1200 computer. Philips 14" colour monitor. Star colour printer. Instruction books/video/cassettes. Will separate, £175. ☎ 0181 7776712.

WANTED

Video Backup system with software and leads. Also Surf Squirrel required with software and leads. Offers to active@ultramail.co.uk or ☎ 07703 974272.

Zool 2 for CD³². I'll pay up to £12/30DM. Email sascha@ancor.ch.

A1200 hard drive user manual and disks. Also AIWA ACD 300 CD-ROM drive user manual and disks. Please help! ☎ 0113 2947696.

Help needed. Has anyone got copies of AF cover DDs volumes 119 to 126? I lost mine in a fire. Write to: Kevin, 71 Morland Road, Sheffield S14 1TD.

Looking for VIDI24 RT digitiser to work with Take 2 software. ☎ 0191 2811616.

Desperately seeking some old Amiga 500 titles: Fuzzball and Super Putty (System 3), Hawkeye, Creatures, Mindroll, Venom Wing and Armlyte (Thalamus). Please ☎ Andy 01642 760930 or email arlizard@hotmail.com.

I require a copy of disk 4 only for History Line. If anyone can help please contact: Steve, Flat 6, 42 Avondale Road, Southport, Merseyside PR9 0NE or ☎ 01704 539267.

Looking for Pro-Grab or any other Frame Grab hardware. Also SCSI hard drive 2GB upwards please. ☎ Dave 01279 302285.

Scala wanted for Amiga 600 (standard 1MB floppy drive). Also Red Sector Demo maker. I am desperate for both. Contact Sean Hughes at: 67 Leatham Crescent, Purston, Featherstone, West Yorkshire, WF7 5DR.

Does anyone have any of the following software for sale? Gods, Pinball Hazard, Essence 1, 2, 3, Adorage 2.5, Clarissa 3, Goal Cup edition, X-DVE 2. Originals only please. Thanks. ☎ Martin 0171 4952657.

Multisync monitor and 060 card for A1200 wanted. ☎ Robert 0141 4296866 after 6.30pm.

Blizzard PPC 160MHz 40 wanted. No SCSI. ☎ John 01900 63568.

Expansion upgrade board wanted. Will pay about £20. ☎ Tim 01473 404768.

PERSONAL

Also see the AmigaAngels document on our CD.

Please email me for details on how to receive my list of providers of free web mail. Grenville gpdixon@excite.com.

If you are a novice or experienced Amiga user and have a problem, we have user group presidents from around the world and hand-picked specialists. Email AmigaSupportService@Onelist.com.

Leading non-print Amiga magazine, AIO, requires new writers to contribute reviews, articles or other help. For more information email aio@aio.co.uk. Anyone considered.

Website, HTML and FTP help given for beginners to get you started in designing and uploading web pages. Contact webhelp@badger.org.uk or see my site at http://www.badger.org.uk/webhelp.

I'd like to get some Amiga contacts on the Internet. Please email davemcglynn@messages.co.uk.

I am an Amiga artist/musician wanting to do graphics or music for your PD, shareware or games. Highly proficient with OctaMED's SoundStudio and Deluxe Paint. Both AGA and standard Amiga formats. ☎ Vivian 001 505 835 2841 (New Mexico).

Any Amiga users new to the Internet who want some free links/galleries and downloads to get them going can go to my site at: http://www.g251273.freeserve.co.uk or email me (Paul) at: pol@g251273.freeserve.co.uk

Does anyone have an interest in towers for A1200s for approx AUS$300 plus postage? If anyone has an A4000 they don't want, working or not, send it to us – we'll pay for postage and we'll look at doing A4000 towers as well. Also, if anyone can get us pictures of A1200 Zorro boards we can see how they fit and hopefully adapt our towers to suit. Please reply to either outback@primus.com.au or evil_homer_rulz@hotmail.com.

To the disabled person who is looking for Final Writer, I have a full version which I would be happy to give you. Please can you email me somehow with your address? MMcClean@t-online.de.

Any Amiga magazines or disk magazines require another contributor? I have knowledge of A1200 and other Amigas. Will work for free. Article previously published in *Amiga Format*. ☎ Ross Whiteford 01738 850732.

BBSes

Quest BBS, Wakefield. West Yorkshire's largest BBS with over 30,000 files online, including the latest 7 Aminet CD-ROMs. Online weekdays, 6pm-6am and weekends, 2pm-6am. ☎ 01924 250388.

Entertainment BBS, Wigan, online 24 hours. ☎ 01942 221375.

Bobbs, ☎ 01243 371644, online 24 hours. Based in Hampshire, south east, host for Powernet. Loads of files, home of BullRPG, The best Amiga Lord clone. Speeds up to 56K.

Skull Monkey BBS, Lincoln. Online 24 hours. ☎ 01522 887933. Friendly sysop. Email sns@skullmonkey.freeserve.co.uk – keeping the Amiga alive.

Want to chat about anything and everything with people all over the globe? Then join Fluffynet – the fluffiest Fido-style BBS mail network! ☎ Total Eclipse BBS, +44 (0) 870 740 1817 or visit http://www.fluffynet.n3.net for information on how to join. Hubs and nodes available. Anyone welcome!

Arachnoids BBS. Leicestershire Online 24hrs. ☎ 01509 551006 Friendly sysop over 10,000 files online. No ratios, everything free. Ninja@Arachnoids.freeserve.co.uk.

TABBS 2000 BBS, Online 24 hours, Running Xenolink v2.8, Amiga sysop with over 15 years of Amiga experience. 20,000+ files online. File requester. Amiga support given. Hertfordshire. ☎ 01992 410215, email sysop@tmbbs.freeserve.co.uk.

Total Eclipse BBS, ☎ +44 (0) 1983 522428, 24 hours. 33.6K, home of Liquid Software Design and MAX's Pro support.

The Forum! BBS online 24 hours, Kilmarnock, Scotland. Over 35 members, 2,000+ files available, including games, pictures, utilities, etc. Sysop: Jamie Maguire. Run by a software development student. ☎ 01563 540863. 36K.

Elevate BBS, Hants, online 24 hours. ☎ 01329 319028.

Bedlam BBS, Leicester, online 24 hours. ☎ 01162 787773.

Moonlight BBS, Bedford, online 6pm-8am, 24 hours at weekends, ☎ 01234 212752. Sysop: John Marchant. Email gnome@putnoe.u-net.com.net Official Transamiga Support BBS, unlimited downloads, friendly sysop with excellent knowledge. Aminet online. Run by an experienced Amiga programmer who will help you out for free.

Maverick BBS +44 (0)1273 233008. Gamez, utilities and more. Very friendly sysops and staff. Powernet Hub: 14:100/102. Email adey@mavericksbbs.freeserve.co.uk.

Bill's BBS, Cumbria, online 24 hours (mail only between 2.30am and 3.30am), ☎ 01229 434393 or 0870 7878615. Sysop: Bill Clark. Visit http://cumbria.cjb.net, email billsbbs@cornerpub.com or bill.clark@ukonline.co.uk. Supports Fidonet. Loads of free files, games, doors, etc. Unlimited downloads. Will close for good at midnight December 31st 1999.

Maverick BBS +44 (0)1273 233008 24Hours Max 1.54, 57600 cps. Gamez, adultz, utilities and more. Very friendly sysops and staff. Powernet Hub: 14:100/102. Powernet points availalbe. Email adey@mavericksbbs.freeserve.co.uk.

Zodiac BBS, Hants. Online 11am-7pm 7 days a week. ☎ 01243 373596. Sysop: Destiny Co. Sysop: Axl. Running Maxs Pro v2.11, Hellnet. Lots of files.

On The Oche BBS, Waterlooville, online 24 hours. ☎ 01705 648791.

X Zone BBS, supporting the Amiga for over two years. Do you want the latest files? ☎ 01635 820590, 6pm-1am, modem callers only (33.6K).

USER GROUPS

French speaking Amiga club. PD disks, help, buy-sell, advice. Also specialists in 8-bit emulation. Please write to BP 120, 4000 Liege 1, Belgium. Please, no PC!

Amiga Club International members receive a bi-monthly magazine disk and PD programs plus helpline. Recently relocated from London, Falloden Way to Dover, the Gateway to Europe. Established 1989. ☎ 01304 203128 or email robroy@catdtp.freeserve.co.uk.

Are there any Amiga users in Cornwall interested in starting a user group in the Helston/Falmouth area? If so, email frank@massin.freeserve.co.uk or ☎ 01326 573596 and ask for Frank.

Amiga North Thames meet on the first Sunday of the month at St Mary Magdalene Vestry, Windmill Hill, Enfield, 1-5pm. Software/hardware problem solving, demos, news and Amiga games. ☎ Mike 0956 867223 weekends or email Ant.london@ukonline.co.uk.

New user group being set up called TAG (Total Amiga Group). Initially in the Somerset area. ☎ Phil 01458 832981.

Are there any Amiga users in Birmingham who want to set up a user group? ☎ Hitesh 0121 6056452.

NPAUG is a new Amiga user group based on the net. We offer a free monthly magazine and tech support over the web. If you are interested in joining, visit our website: http://members.aol.com:/npaug/home.html or email me: npaug@aol.com.

Need a new IRC chat channel? Come to #PoweredByAmiga on ARCNET for fun and informative chat about Amigas and otherwise. Visit our URl at http://www2.prestel.co.uk/amigav/PBA/. We mostly meet at weekends about midday.

Continued overleaf ➡

South West Amiga Group, (SWAG) meets every 1st Thursday of the month, 8:30pm at the Lamb & Flag (Harvesters), Cribbs Causeway, Bristol. SWAG intends to get Amiga users together, provide info and support, promote the Amiga and have a laugh. Contact Andy Mills: Swag@wharne.u-net.com.

Are you Welsh, live in Wales or love Wales? Then join Cymru Amiga User Group. Visit us on http://bounce.to/caug or email dark.lords@deathsdoor.com to join.

West Lancs User Group. Sundays, 1pm-4pm at St. Thomas School Hall, Highgate Rd, Upholland. ☎ 01695 623865, email ralph@twiss.u-net.com. Help and advice, novices and experts welcome.

Is there anybody in the Northamptonshire area interested in starting up a new user group? Please contact me: ☎ 01536 724309 or email nsthomas@ukonline.co.uk.

Power Amiga User Group based in Portsmouth for users of all ages and levels. We meet once a month on the last Saturday. We generally have Amigas of all sorts, prize draws, tutorials and general discussions each meeting. ☎ Lee 01243 779015 (weekends only) or email LeeScott@free4all.co.uk or visit http://www.poweramiga.freeserve.co.uk.

Coventry and Warwick Commodore Computer Club (CWCCC) meets once a month on the first Wednesday at Earlsdon Methodist Church, Coventry. For more information email Luke Stowe luke.stowe@ukonline.co.uk or visit http://ukonline.co.uk/luke.stowe/cwccc/index.html.

Workbench, the Manchester Amiga user group, meet on the first Thursday of each month at 7.00pm and offer general Amiga chat. ☎ 0161 839 8970. Also, check out our website at: http://www.workbench.freeserve.co.uk Or email: mail@workbench.freeserve.co.uk.

United Amiga/Amstrad User Group (UAUG) est 1986: Largest user group for Amiga and Z80/6502 8-bits. 40 page magazines, cover disks (tapes), digitising, scanning, helplines, email service, Internet book search. Free gift upon joining. Send SAE for details to: The Editor, 13 Rodney Close, Rugby CV22 7HJ or email uaug.s@ukonline.co.uk

Amiga Support Association. We offer help, advice and a friendly chat. Monthly meetings, tutorials and a fact file are all available. To join our mailing list send a mail to Amiga_SA-Subscribe@egroups.com. Contact Phil: Snood@ukonline.co.uk ☎ 01703 464256 or ☎ Paul 01705 787367 for more information or visit http://www.btinternet.com/~philip.stephens

Great Yarmouth user group. Anyone interested in joining this user group please contact John ☎ 01493 722422.

Want the latest reviews, news, interviews, articles? Then visit the NEW AIO website at http://www.aio.co.uk, or visit #amos on ircnet, Saturday 9pm-midnight.

SEAL meets twice monthly at Northlands Park Community Centre, Basildon, Essex. We offer help, tutorials and presentations plus scanning, printing and email. Contact Mick Sutton, 20 Roding Way, Wickford, Essex. ☎ 01268 761429 (6-9pm). Email seal@thunder.u-net.com or visit our website, http://seal.amiga.tm.

Huddersfield Amiga User Group (HAUG) meet on the first and third Wednesday of every month at The Commercial Inn, Market Street, Paddock, Huddersfield from 7.30pm onwards. ☎ Geoff (01484) 322101 email geoff@geemil.demon.co.uk or visit http://websites.ntl.com/~paul.4/index.html.

Felbrigg Amiga Group meets weekly near Cromer. We are a group for novice and expert users. For more information ☎ 01263 511705 or 824382.

Deal Amiga Club welcomes all old hands and newcomers alike, whatever your ability. Admission £1, under 16's 50p. Annual membership is now free. If you've bought some bits and don't know how to put them together then bring them along and let us help. ☎ 01304 367992 or email superhighwayman@hotmail.com.

Pennine Amiga Club. Free worldwide helpline supporting all models. Non-profit making club. Not a business. We help with free advice: ☎ 01535 211230.

Northern Ireland user group welcomes new members. Emerald Amiga Users meets regularly in Strabane. Please contact Charles Barr. ☎ 01504 884700.

Medway and Maidstone Amiga collective. Meets monthly. Advice at all levels. Experts and beginners wanted. ☎ Dave 0961 809466.

Join a new email club for Klondike, a Reko Productions game. Cardset creators and cardset collectors, Amiga and PC. Email kevin@reko.karoo.co.uk (make friends).

NAC Nottingham Amiga Club New club starting soon. New/old users welcome! From A500 to A4000. Hints and tips on all software, games and hardware. ☎ Mark 0115 9566485 weekends only!

New Amiga sound and demo association seeks input, contacts and support to form a user group based around the Amiga music and demo scene. Interested? ☎ Dave 01243 864596 or 0961 985925.

Interested in Internet Relay Chat? Why not visit #Amigazone on Dalnet? We are a friendly bunch and meet at 10pm every day. Visit our website at: http://www.tsd-ltd.demon.co.uk.

Thanks to all the helpers on the Amiga Free Helpline. ☎ Terry 01709 814296 if you can help.

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Keep in touch

The millennium*'s looking bright and bouncy with new user groups springing up all around

Over the last few years, through my involvement with AmigaSoc and more recently this article, I have had the pleasure of meeting many of the user groups throughout the UK and Europe. Despite the uncertain situation with Amiga and Gateway the user group scene appears to be going from strength to strength. This is in part due to the fact that the Amiga itself has always seemed to bring out the sense of community in those who use it – even in it's heyday it had a number of notable user groups – and partly due to the mismanagement of the past half decade. Amiga owners simply have no-one else left to turn to for help, support, direction and hope for the future than the user groups.

Over the last couple of years a number of well-established Amiga user groups have sadly declined as their members drift towards the PC or other platforms, but more encouragingly a large number of new groups have appeared, some successfully, some not. Quite interestingly, user groups in large cities seem to be having the hardest time keeping afloat. ANT, a new group in North London had a rocky start for the first six months or so with, on many occasions, only a handful of members at its meetings. Fortunately for ANT membership numbers are on the increase and the future of the group looks very promising indeed. However, Amiga groups in other UK cities such as Birmingham, Manchester and Edinburgh have reported difficulties with dwindling membership numbers.

Meanwhile, user groups in more rural locations such as SEAL (Essex), Kickstart (Surrey), ASA (Portsmouth) and HAUG (Huddersfield) are going from strength to strength. With over 30 active members, these larger clubs are able to turn their attentions to offering more than the traditional meetings by organising extra events for members and their friends. SEAL produces a quarterly magazine (more on that next issue) and Kickstart have been responsible for organising two Amiga sales, much like mini WoAs. Even with these new user groups springing up to supplement the existing ones there are still a large number of Amiga owners who don't have a user group near to where they live.

With over 30 active members, larger clubs are able to offer more than just the traditional type of meetings by organising extra events for everyone

AMIGA soc USER GROUPS

To help address this problem AmigaSoc created the "Lost Souls" database, which stores the contact details of Amiga owners who have expressed a desire to be part of a user group but don't have one in their location. AmigaSoc have got some neat technology behind the database which can calculate the location of each entry using postcodes thus enabling them to put lost souls in contact with other Amiga owners in their area. So far this technique has been used to start two new user groups and supplement the membership of at least four more over the last six months. With over 200 entries currently in the database, watch this space for news of even more new groups.

In addition to traditional user groups, the growth of the Internet has lead to a number of "virtual" user groups appearing, such as Team Amiga and *Amiga Format*'s very own afb on e-groups. The advantage of these is that location isn't an issue and very often they attract members from all over the world. Possibly their only disadvantage is that it becomes virtually impossible to meet every member face to face.

I believe that the Amiga is still very much alive. Gateway and Amiga may not appear to believe so, and some may say they are doing their best to kill what is left, but while there may not be any new machines on the horizon at the moment, there will always be Amiga owners. Name me one single area where the Amiga can't compete with the PC and I can find someone in a user group somewhere that has addressed this issue and found a solution. As long as the Amiga has this kind of support behind it, it can never die.

You can find contact and meeting details for all the user groups listed below at http://uk.amigasoc.org/user groups or on this months *AFCD* website section.

You can sign up to the lost souls database by filling in the form on this page or by gong to the website: http://uk.amigasoc.org/user groups/exls.html

Chris Livermore

ACTIVE USER GROUPS:

- **Ayrshire (AAS)**
- **Bristol (SWAG)**
- **Coventry and Warwickshire (CWCC)**
- **Deal, Kent (DAC)**
- **Edinburgh (EAC)**
- **Essex (SEAL)**
- **Huddersfield (HAUG)**
- **Leicester (LAUG)**
- **Central London (AmiLon)**
- **East London (QMW)**
- **North London (ANT)**
- **West London (WLCC)**
- **Northern Ireland (EAU)**
- **Portsmouth (ASA)**
- **Portsmouth (Power Amiga)**
- **Surrey (Kickstart)**
- **Wales (CAUG)**

Lost Souls Form

No user group near you? Then fill in this form and send it to: User Groups • c/o Amiga Format • 30 Monmouth Street • Bath • BA1 2BW.

Name ....

Telephone ....

Email ....

Address ....

....

Postcode* ....

***You must fill in your postcode as this is used to calculate how far from other Lost Souls you are.**



User groups welcome everyone to their meetings, so you never know who'll turn up.

Y2K Information

Just the FAQs

The Year 2000 problem and the Amiga. Expertly written by Olaf Barthel and crudely abridged by Ben Vost

To make a long story short, generally the Amiga doesn't suffer from the Year 2000 problem in the context known to the PC world. Still, the Amiga faces distinct date problems and a single, specific Year 2000 problem with limited scope which will be described here.

How can I tell if an Amiga is Year 2000 compliant?

The Amiga runs an operating system called AmigaOS which, depending on the operating system version, is either fully Year 2000 compliant or may have a problem in the Year 2000. To tell which version an Amiga is running you can perform a simple test. If you can't get an early boot screen by holding down both mouse buttons when you turn your machine on, then you probably have a version of the OS that may have a problem in the year 2000.

Is the software written for the Amiga Year 2000 compliant?

Software written for the Amiga computer is not automatically Year 2000 compliant. While the Amiga operating system provides time and date keeping services which are Year 2000 compliant, it was always left to the individual software developers to use them properly. Amiga, Inc. neither supports nor maintains third party application software.

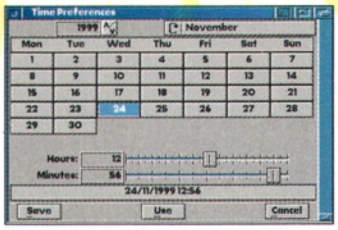
How does the Amiga handle date and time?

The Amiga operating system has always followed the UNIX model in measuring time as the number of seconds that have elapsed since a fixed point of time. Under AmigaOS that fixed point of time (also known as 'epoch') is 00:00:00 of January 1, 1978 (Unix uses 00:00:00 GMT, January 1, 1970). The operating system manages time and date through a module known as timer.device.

How does it maintain system time?

The early Amiga computer models (including the A1000) did not support a battery backed up real-time clock that would keep ticking and maintaining local time even after the machine was switched off. For the Amiga 500 the battery backed up clock was an extra one could buy separately.

On machines without battery backed up clock hardware, the Amiga sets its system time according to the modification date of the boot volume. In other words, the point of time the last file was modified or created on a disk would determine the system time. As this was by no means accurate, the AmigaOS boot process would suggest and prompt you to adjust the system date once the system had booted.



Will you have a problem come January the first?

What are the problems?

As far as is known today, the Amiga faces four date problems. Two are design problems caused by numeric overflow, one is caused by hardware limitations and one is a real bug that will strike in the year 2000.

1. SetClock stops working in the year 2000

Amiga Workbench 1.2 and 1.3 shipped with a program called *SetClock* which read the battery backed up clock time at startup. This program suffers from a bug which causes it to miscalculate the time starting with the year 2000. Once the year counter rolls over to 00, *SetClock* will believe that the year is 1978 until the year 2079 is reached; that's when it will believe that the year is 1979 – not necessarily an improvement. Only the *SetClock* program found on the AmigaOS1.2 and 1.3 Workbench disks suffers from this problem. To tell whether you have a version that works or not, check the file size; if it is less than 1,000 bytes in size you will be okay. Size isn't everything, though. Some third party hardware extensions would use their own versions of the *SetClock* program. They went by the same name, but read the system time from a different hardware location. Do not replace these custom versions. You will probably be using such a custom version if your real-time clock is hooked up to a mouse port or the keyboard connector.

2. Negative time

As already stated, the Amiga measures time in seconds. This means that January 19, 2046, 03:14:07 will form the largest number of elapsed seconds a signed 32-bit integer number can hold. This is not a problem for the time keeping module (timer.device). However, application software and other operating system components which treat the number of seconds as a signed quantity will get into trouble one second later: the number of seconds will rise to 2,147,483,648 which in two's complement format represents the negative number -2,147,483,648. AmigaDOS, which always treats time as a signed quantity, will consider this date to be invalid because it is "negative". Worse, the ROM date conversion routines exhibit a bug which, once the date is later than January 19, 2046, 03:14:07, causes all subsequent date operations to be inaccurate. The immediate effect this has is that calculations on dates can be off by more than two years.

This behaviour is consistent through all AmigaOS versions. A fix is not available yet, but research is in progress to investigate whether this bug could be fixed by updating several AmigaOS modules (locale.library, dos.library).

3. Time rolling over

An unsigned 32-bit integer can hold a maximum value of 4,294,967,295. When the Amiga has accumulated that many seconds, it will be February 7, 2114, 06:28:15. One second later the seconds counter will roll over and restart at 0. In other words, on February 7, 2114, 06:28:16 the Amiga will believe that it is midnight on January 1, 1978. No fix for this problem is available yet.

4. The battery backed up clock can only count to 99

Amiga computers equipped with battery backed up real time clock hardware use one of two different hardware designs: either the Oki MSM6242RS or the Ricoh RP5C01 chip. As is common with clock chips of that type, the year counter is implemented as a two digit BCD number. Once it reaches the year 99, the counter will roll over to start again at 00.

Starting with Amiga operating system version 2.0, the boot process will read the battery backed up clock time and set the system time accordingly. This takes place every time the Amiga is reset. Because the year number covers only two digits, the same algorithm as used by the AmigaDOS Date command is employed. Consequently, the Amiga system date set at system startup time will always be in the range 1978-2077. While the system clock will keep ticking beyond December 31, 2077 a system reset will set the clock back to January 1, 1978. No fix for this problem is available yet.

Read the full version of this document at: http://www.amiga.com

afb amiga format bulletin

When you're a member of afb you're guaranteed a captive audience for all your opinions, trivia and bizarre polls!

First up, the afb is a mailing list, which basically means a list of people, who are all interested in the same subject, mailing each other. Simple when you think about it!

The afb is the official *Amiga Format* mailing list, and with over 700 list members you can be sure to find some interesting topics cropping up every now and again. Just recently we have been reading about after-sales service from various Amiga dealers, the fun you can have watching *Voyager* muck about with table layouts, as well as the answers to people's problems. An example of this would be the dead Amiga. Several people replied to this, and eventually the owner of the dead Amiga managed to get his beloved machine working again, having traced the problem to a few faulty wires in his PSU. It is this sort of help that is commonplace on the afb, so if you have a software or hardware problem then the members of afb can help you out! I recently asked if it was possible to turn off the 'Optimised...' screen that occasionally pops up with MagicWB, and the answer was given the same day.

Of course, you get the odd silly or strange topic, recently there was a *Monkey Island* related one which culminated in me and another member virtually relaying the storyline behind one part of *Monkey Island 2*..."Look behind you! A three-headed monkey!". Enough said.

We also get polls every now and again (see the Rules and Regs boxout for an important bit of info about polls) ranging from such topics as the 'sexy lady' on the recent front cover, to what is going to happen to the Amiga in the future. If you are a member of the afb then your vote counts, and the "Will you be buying OS3.5?" poll in the latest issue is a classic example of this. Being on the afb means you can get your opinion heard not only on the mailing list but also in the magazine.

Every issue the afb page will be written by a different member of afb. Fancy a go?

If you fancy making a suggestion that has something to do with the mag, for example, you want more editorial or something (surely you have enough by now!) then all you have to do is ask, as most of the *AF* staff are subscribed to the list; the prestigious Mr Vost and Mr Drummond participate actively. That's not to say it'll definitely happen, but such is life.

Another thing worth mentioning is the sheer number of spin-off lists that have sprung up from the afb. If you get a topic on the main list that is ever so slightly off-topic, then the chances are someone has set up a spin-off list especially for threads about that topic. For example, there is now an afb-movie list, for all things on movies, and from what I hear, other things too (I'm not actually subscribed myself). However, if you want to learn more about these, then here is not the place, afb is!

So if you would like to participate in healthy conversation with Amiga users all around the globe, have a penchant for catching up with the latest news on the Amiga and *Amiga Format*, and have around 100-150 spare places a day in your mailbox, then the afb is for you!

Gareth Griffiths

GETTING ON AFB:

You can subscribe to the afb by going to the following website and signing up:
http://www.egroups.com/group/afb/

If you just want news on when the next issue of *Amiga Format* will be out, we offer that at:
http://www.egroups.com/group/afb-announce/

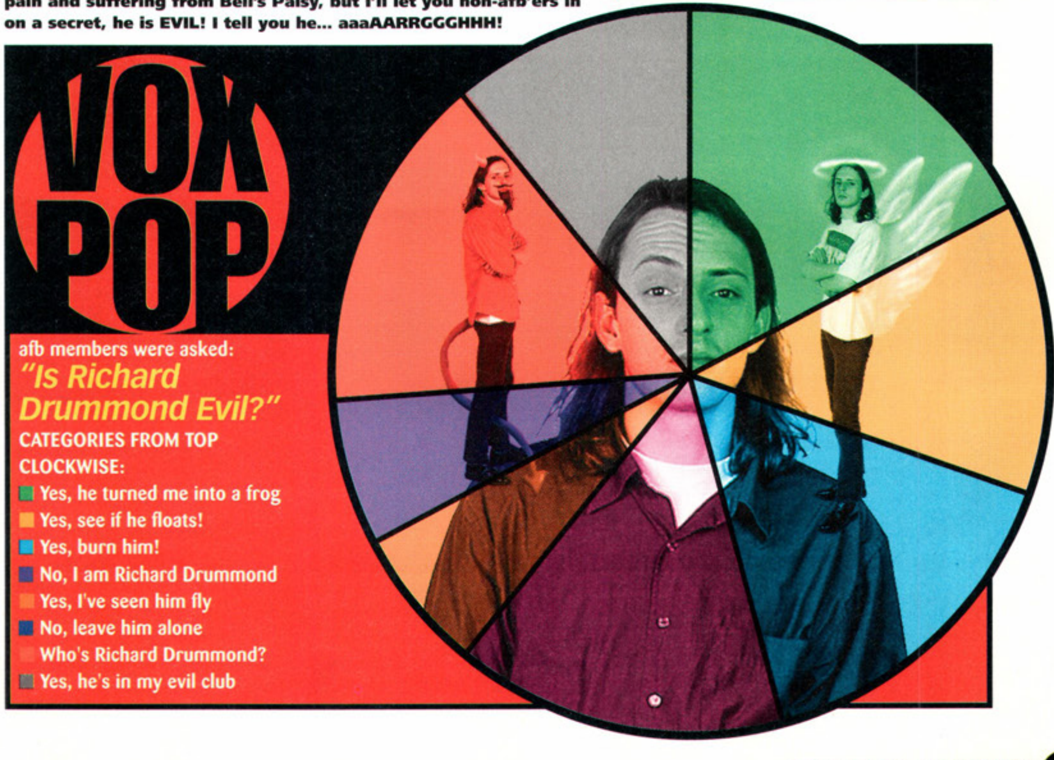
It's worth joining both lists since they each offer unique things and the announce list usually only has one email every four weeks.

RULES AND REGS:

Based on the fact that people complain about a lack of regulation on the list, we've decided to introduce some hard and fast rules. Expect these to change as time goes by, although some will stay fixed:

- **All polls must have dates. For an example of this, look at existing polls before starting one of your own. Also, unless absolutely necessary, choose a closed or anonymous poll – the named one takes up far too much space.**
- **Make sure you quote sensibly, don't include the greeting or signature from the previous mail, etc.**
- **Pay attention to and keep all mails with MANAGE at the start of the subject line.**
- **Keep the subject live. Make sure that it applies to the mail you are sending, or change it to something more appropriate.**
- **There are no content restrictions on afb, although swearing is frowned upon, but please don't include attachments unless previously agreed.**
- **Any URLs posted should have the "http://" part to enable people to simply double-click on them to launch their browsers.**

The mistaken apprehension that Rich is evil arose because of his stern appearance at the WoA show in July. He was in a lot of pain and suffering from Bell's Palsy, but I'll let you non-afb'ers in on a secret, he is EVIL! I tell you he... aaaAARRGGGHHH!





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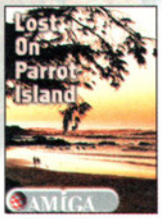




JETSTRIKE







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If you want to speak to us about a technical problem, we have a reader call day on Tuesdays. Call us on (01225) 442244 (10am–1pm,2pm–5pm).

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AF'S REVIEW POLICY

...is very simple. ***Amiga Format*** is written by the most experienced Amiga users in the world and what we say goes. OK?

WHAT OUR REVIEW SCORES MEAN

90+%	These products are absolutely top notch. They are hard to find any fault with and that's the reason they get an ***AF Gold*** award.
80-89%	These are excellent products that could be improved ever so slightly. They are well worth your cash.
70-79%	A very good product with a few flaws. Items that get a score in this range are still good, but need work.
60-69%	Above average products which need improvement to get a better score.
50-59%	Average products get average scores.
40-49%	Below average and needs a fair bit of work to make it worthwhile.
30-39%	Needs a lot of work for a good score.
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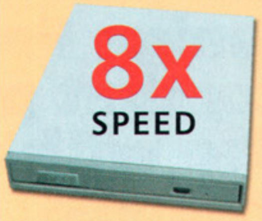
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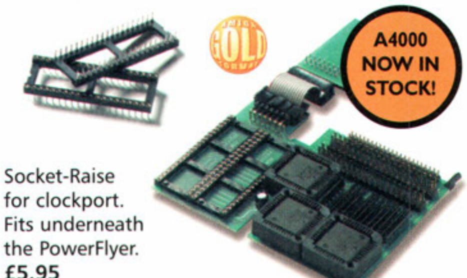
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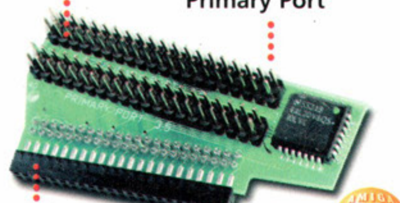
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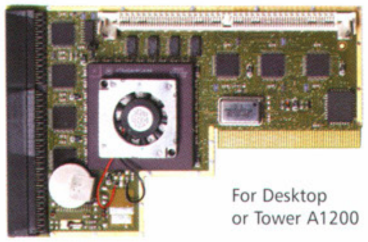
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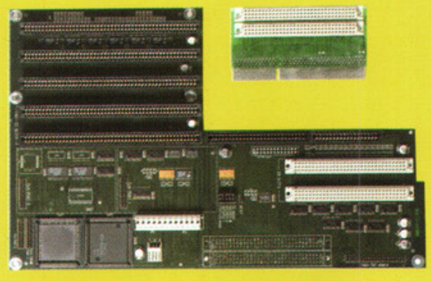
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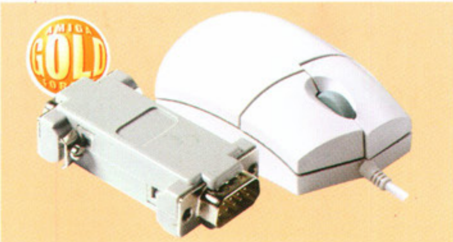


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